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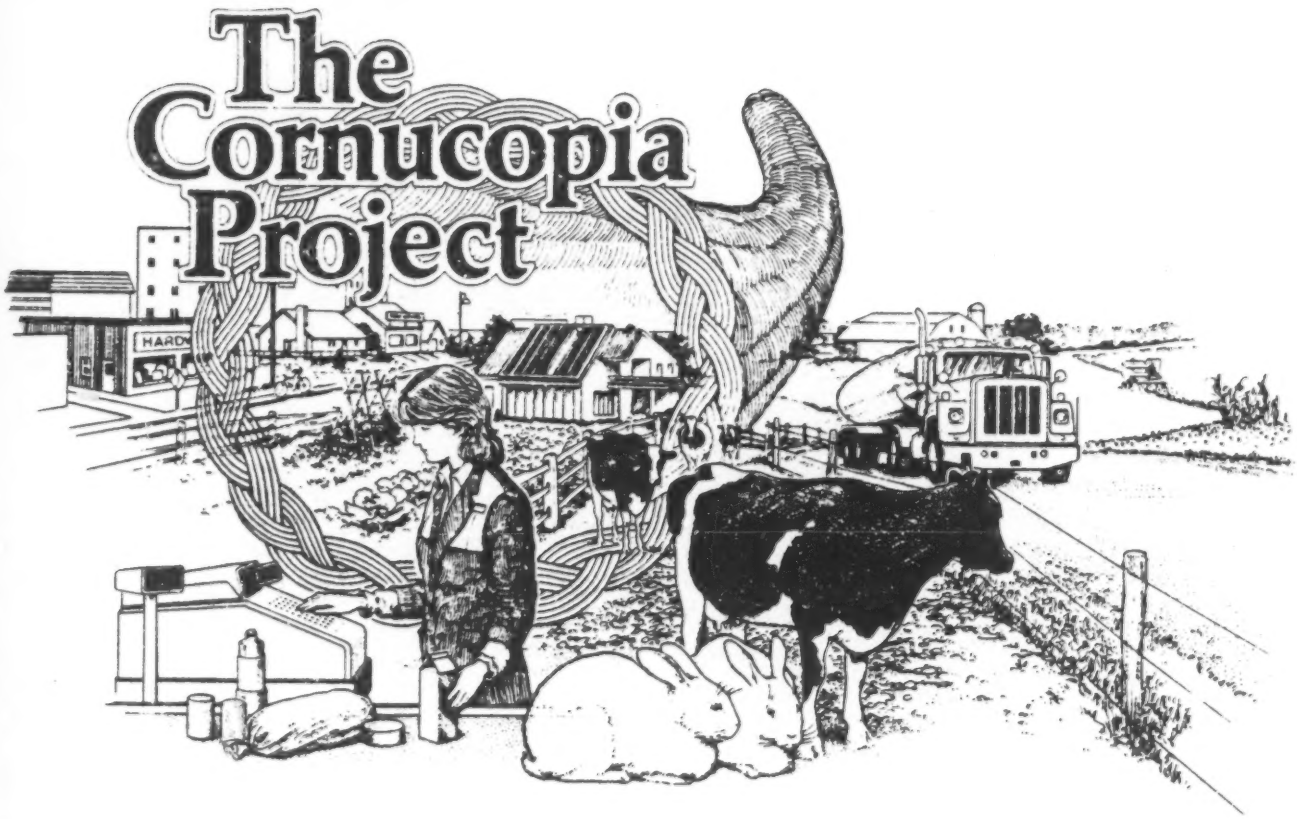

THE KENTUCKY CORNUCOPIA: RENEWABLE RESOURCE FOR ECONOMIC DEVELOPMENT

A Study of the Kentucky Food System

by

MICHAEL J. GREENE
Kentucky Research and Services

for

The Cornucopia Project of the Regenerative Agriculture Association
33 East Minor Street
Emmaus, Pennsylvania 18049
Phone (215) 967-5171

1983

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On a quiet street in Frankfort, Kentucky, an historic plaque marks the place where bibb lettuce was first produced.

As with many other historic markers across the Bluegrass state, this plaque might be read in passing, its significance reduced by the passage of time. But, looking back beyond the late 1860's when John Bibb was working in his garden, Kentucky grew an abundance of food.

In addition to the flax, hemp, and tobacco which generated the greatest income for Kentucky farmers, the post-settlement Census show that our state produced a wide variety of edible foods.

By the early 1800's Kentucky farm products provided an important attraction to food wholesalers at the Port of New Orleans and this trade generated significant income for our state's farmers.

During this period, the legendary Colonel Wilkerson, whose entrepreneurial spirit made him a fortune, had organized an export business through which Kentucky farmers obtained scarce, hard cash in return for their labor upon our productive soils.

At the time bibb lettuce was being developed in Kentucky, better than half of our working population was employed on Kentucky's 78,000 farms which covered about 6 million acres.

This labor, in conjunction with our good soils and climate, put Kentucky in the top half of all states in the production of honey and maple syrups, fruits, wool, oats, rye, barley, and potatoes and ranked it 6th among the 31 states in total value of all livestock raised.

By 1900, almost 20% of the state's 2 million people worked on Kentucky's 240,000 farms [illegible] farm-related jobs. And, though it represented a decline from its peak in the 1940's, 25% of Kentucky's employed population worked on farms in 1960.

Today, Kentucky leads the nation in the production of tobacco and is near the top among soybean producers. We export hogs and produce more milk than we consume. But, we no longer feed ourselves. In fact, Kentucky is now dependent upon others for 63% of its food.

To the casual observer, our importing of food may seem of no greater significance than our importing other commodities such as clothing or televisions or cars and trucks. But food is different from other commodities and, for this reason, its source and supply warrants closer attention.

Food is a necessity for which there is no substitute. Unlike the oil embargo of the early 1970's, whose impact was reduced by substitution, a comparable disruption in the U. S. food system would not lend itself to a similar solution.

Although the U. S. is a food exporter, production of vegetables and fruits is concentrated in two or three areas of the country. A prolonged period of adverse weather in these areas, or a protracted disruption of the transportation system which brings these foods to Kentucky, would quickly result in the depletion of stocks of these foods in our state.

Kentucky is capable of producing much more of its own foods than it does. The long term benefits of maximum utilization of our state's renewable resources would be significant over and above the relatively greater security doing so would provide. In this respect, food production for in-state consumption has been overlooked by our state's economic development strategists.

This report highlights some of the factors which contribute to Kentucky's need to import 63% of its food. It consists of a summary analysis of our state's agricultural resources and what products they to produce; a detailed

estimate of what types and quantities of foods are imported to Kentucky; estimates of the employment and income benefits which might result from increased food production for in-state consumption; discussion of some of the factors which have affected food production for human consumption in Kentucky; and recommendations for action to reduce food imports to Kentucky.

This report is not a complete harvest of all the information which is relevant to the subject of food imports to Kentucky. It is, at best, a seed bed from which ideas and the will to make our state a cornucopia may sprout.

KENTUCKY IMPORTS 63% OF ITS FOOD

The 1980 Kentucky Food Imports Chart at the back of this report shows that Kentucky imports 63% of its food. The Chart was prepared to help provide a focus for Kentuckians who are interested in where our food comes from and who produces it.

It attempts to picture the Kentucky food system by showing how much of the basic foods we ate in 1980, what we paid for them, how much was produced in Kentucky, and how much land was used to produce what we ate.

The Chart assumes that our eating habits were similar to the nation's in 1980 and that when we ate more of an item than was produced by Kentucky farmers, we imported the difference.

For example, the first item on the Chart, listed under MEATS, is beef. Under the KENTUCKY PRODUCTION heading, the first two columns show that Kentucky farmers produced 82 million pounds (retail weight) of beef in 1980 and that this sold, at retail, for $222 million dollars.

Under the next heading, KENTUCKY CONSUMPTION, column 3 shows that our consumption of beef in 1980 was 247 million pounds or roughly three times greater than our production. Column 4 shows that the retail value of the beef we ate in 1980 was $667 million dollars.

Column 5, under the KENTUCKY IMPORTS heading, shows that in order to make up the difference between what we consumed and what we produced, we imported 67% of our beef in 1980. Column 6 shows that over $444 million left Kentucky to pay for this imported beef.

Columns 7 and 8, under the heading KENTUCKY EXPORTS, are, blank for beef because we produced less than we consumed. The last column on the Chart, under the heading of LAND REQUIREMENTS FOR KENTUCKY CONSUMPTION/ACRES, shows that it would take approximately 850,000 acres to produce the quantity of beef we consumed in 1980.

The totals along the bottom of the Chart show that the retail value of Kentucky's production of the items listed amounted to about $1.7 billion. They also show that about $600,000 worth of these items were produced in amounts exceeding our estimated consumption of them and were therefore exported.

By subtracting the value of our exports from the value of our production of the items listed, the Chart shows that the retail value of the agricultural production which remained in Kentucky ($1.1 billion) equaled about 37% of the total retail value of the listed foods which were consumed by Kentuckians in 1980.

Put another way, this means that 63¢ of each food dollar Kentuckians spent for the foods listed on the Chart paid for foods from as far away as California, Washington, or Colorado.

In reviewing the Chart, the two most important columns are % IMPORTS (Column 5) and LAND REQUIREMENTS (Column 9) because they show the extent to which Kentucky is dependent upon producers in other states for each type of food, and the amount of land used to produce what we ate in 1980. (Blanks on the Chart indicate that data for a food item was not available.)

Reading down the Chart, Column 5 shows that in 1980 Kentucky imported nearly 100% of its consumption of fresh and processed vegetables and fruits, turkey, fish and 90% or more of its veal, lamb, and chicken.

The total at the bottom of the last column shows that it took about 2.2 million acres to produce the quantities of the listed foods we ate in 1980.

The Chart raises many questions for Kentuckians. The following section sketches the outlines of possible answers to some of these, and as an interested Kentuckian, you are encouraged to raise and answer your own questions.

CHART RAISES QUESTIONS

The 1980 Kentucky Food Imports Chart raises interesting questions for Kentuckians.

As food consumers, we might ask whether our trips to the grocery store would be less expensive if food prices did not include shipping costs from other parts of the country.

As farmers/businessmen, we might wonder whether and how we could tap the $1.79 billion food market which Kentucky's food imports represents. If you raised beef cattle, you might question why beef produced in other states should capture over $444 million of Kentucky's retail food dollar.

Public officials might think about the number of new Kentucky jobs the production and processing of more of our own food would generate.

Unfortunately, there are no hard and fast answers to these questions. For this reason, perhaps more than any other, they need to be raised and to be answered.

WHAT FOOD IMPORTS MEAN TO KENTUCKY CONSUMERS

By manipulating some of the numbers shown on the Chart, we can sketch the broad outlines of an answer to the question which might be raised about the transportation costs of imported foods.

In 1980 Kentuckians ate an estimated 4.1 billion pounds of the foods listed on the Imports Chart. Of this total, about 3 billion pounds (of which 2.2 billion pounds was milk) were produced in Kentucky and 1 billion pounds were imported.

Assuming that most of our imports are delivered to Kentucky by trucks, each carrying A 40,000 pound load, our imports in 1980 required 428,293 trucks! Parked bumper-to-bumper, these 428,293 trucks would stretch 4,867 miles - from Kentucky to California and back!

By dividing the totals along the bottom of the Chart by Kentucky's 1980 population (3.5 million) we can say that for each Kentucky food consumer in 1980, $865 was spent for the food items listed on the Chart. Assuming 3.1 people per family, we can estimate that $2,681 was spent by each Kentucky household in 1980 for the food shown on the Chart.

By multiplying these two numbers by the estimated level of imports to Kentucky (.63%) we can say, overall, that $511 per capita, and $1,689 per household, left Kentucky to pay for food grown elsewhere.

Estimating that food transportation costs equal about 5% of the retail price, $25 of the $511 per capita expenditure and $84 of the $1,680 per household expenditure for imported foods in 1980 paid for transportation of that food to Kentucky.

This means that the upper limit of the amounts of money food consumers in Kentucky could save every year if our State produced more of its own food is $90,000,000.00!

WHAT FOOD IMPORTS MEAN TO KENTUCKY FARMERS

The questions raised by farmers/businessmen are more difficult to answer. Many factors and forces affect food production on a commercial basis, and many of them are beyond the control of the farmers.

However, taking these many factors into consideration, it is estimated that Kentucky farmers could double their incomes by using their land to its maximum capability within the context of good soil and water conservation practices.

According to a 1977 study of Kentucky's agricultural potential, by the University of Kentucky College of Agriculture[1], Kentucky farmers were

[1]Agricultural Potentials for Kentucky, University of Kentucky College of Agriculture, 1977; prepared for the Governor's Council for Agriculture.

underutilizing their crop and pasture land and much of the land which was being farmed was not being put to uses which could have provided the greatest returns to farmers.

By assigning Kentucky's most productive soils to the production of crops that would yield the highest returns per acre, the study found that Kentucky farmers could triple their livestock (including beef) income, above feed costs. Additionally, using this formula of land utilization, the researchers found that alfalfa production could be increased 16-fold, soybean production by a factor of four, and corn production by a factor of three.

The study proposed that this increased production of alfalfa and corn be used to feed livestock raised in Kentucky and predicted that these increased feed supplies would permit Kentucky farmers to increase livestock numbers (as above), feed more hogs for slaughter, and sell a much higher percentage of the state's annual calf crop as yearlings or as finished cattle.

For fruits and vegetables, the study estimated that better utilization of land resources could increase Kentucky production of fruits, such as strawberries and grapes, by 830% and apples, peaches, cherries, pears, and plums by more than 300%. The study estimated that fresh vegetable production could be increased by more than 100% and processing vegetables by more than 500%.

Over the long-term, the schedule of better utilization of Kentucky's farmland, as outlined by the College of Agriculture in its study, would significantly reduce Kentucky's level of food imports as shown on the Chart. As cited in the study, this would increase Kentucky's total farm income to almost $4 billion or more than double the estimated 1980 total.

WHAT FOOD IMPORTS MEAN TO PUBLIC OFFICIALS

Providing an outline of the answer to the question about the number of new jobs which would result in Kentucky from increased food production is

also difficult because the process by which food gets from the farmer to the consumer is complicated.

Our food system is comprised of a series of middlemen or "segments" between the farmer and the consumer which include warehousers, manufacturers and processors, wholesale and retail grocers, and restauranteurs which sell the finished products to us as consumers.

Although the model in Figure 1 below is a simple one, it shows the basic path of food from the farm to our tables.

Figure 1

COMPONENTS OF KENTUCKY FOOD SYSTEM

Component of Kentucky Food System			Employment[a]
	Agriculture Supplies and Services		66,255
	Farmer		53,000[b]
Farm Consumption	Sale	(Storage)	
	Wholesale		13,107
	Manufacturing and Processing		20,257
	Retail Grocers		34,147
	Restaurants		57,973
	Consumers		
Totals			244,677
Total Kentucky Employees			1,064,174
Food System Employment as % of total Kentucky employment			23%

Source:
a. County Business Patterns, 1980
b. 1978 Census of Agriculture (full time farmers).

As shown, farmers use land, labor, capital, and supplies and equipment to produce food. After harvest, the farmer has the option of eating, selling, or storing the food. If sold, the buyer will use the food for either domestic or foreign (export) consumption.

If a domestic wholesaler buys the crop, it is in turn sold to a manufacturer or processor, other wholesalers, or retail grocers or restauranteurs. The Chart shows that the consumer is the ultimate user of the farmer's crop.

The Chart also shows that 66,000 Kentuckians were employed providing goods and services to 53,000 full-time farmers, 13,000 worked in wholesale food-related jobs, 20,000 in food manufacturing and processing, 34,000 in retail grocering, and 58,000 in restaurants. Taken as a whole, our food system provides jobs for 245,000 Kentuckians.

Since Kentucky imports so much of its food, more than 245,000 people are employed in jobs related to feeding us. These additional jobs are located in the states from which we import our food and, in attempting to predict how many new Kentucky jobs would be generated by reducing Kentucky food imports, we are, in effect, estimating how many of these food-related jobs presently located in other states would come to Kentucky.

Since, as shown above, our food system is comprised of "segments", an estimate of the total number of new jobs which might result from reduction of food imports requires estimates for new jobs in each of the "segments" of our food system.

To do this, the relationships between the segments of the Kentucky food system must be established. For example, looking again at the Chart above, we see that approximately 66,000 Kentuckians were employed in 1980

providing goods and services to our state's 53,000 full-time and 50,000 part-time farmers. Using these goods and services, our 103,000 farms produced $1.7 billion worth of agricultural products.

If our farmers increased food production, as the College of Agriculture study suggested they could, the number of Kentuckians employed in providing goods and services to them, as well as those employed in the warehousing and manufacturing and processing segments of our food system, would also increase.

Determining the extent to which employment in Kentucky would increase as a result of increased production of food by Kentucky farmers, requires the use of a forecasting principal known as the "multiplier".

For example, through their studies economists have found that for each 10 new jobs in a clothing manufacturing plant located in a non-metropolitan county in Kentucky, two additional jobs are created in the community outside of the manufacturing plant. These two additional jobs in the community result from the increased demand for goods and services that the 10 new jobs in the plant generate. In this example, the economists say that the employment multiplier for the clothing manufacturing sector of the local economy is 1.2 (i.e., 1.2 x 10 new jobs in the plant = 12 new jobs in the community).

The Kentucky multiplier for agricultural production is estimated to be 1.3[2]. Using the same formula as above, this means that 10 new jobs on a farm in Kentucky would generate the need for three additional jobs in the sector of the local economy which provides goods and services to farmers.

[2]How New Local Industry Affects Employment of Rural Kentucky Residents, Smith, Infanger, and Stoll; for the Kentucky Development Cabinet.

The multipliers for the manufacturing and processing and for wholesaler sectors of our food system are estimated to be 2.57[3] and 1.58[2], respectively. This means for ten new food manufacturing, and processing jobs in Kentucky, 16 additional jobs would be created elsewhere within the state. Ten new jobs in the wholesale sector would generate eight additional jobs.

Using these multipliers, Figure 2 below shows that ten new jobs in each of these sectors of our food system would generate a total of 53 jobs.

Figure 2

FOOD SYSTEM

EMPLOYMENT MULTIPLIERS

Food System Sector	New Jobs		Multiplier		Add Jobs	Total New Jobs
Farm	10	x	1.3	=	(3)	13
Farm goods and sers.	10	x	2.5	=	(15)	25
Food mfg. and proc.	10	x	1.5	=	(5)	15
Totals	30				(23)	53

Economists have also found that a "multiplying" effect exists with respect to the incomes which are derived from various types of employment. These income multipliers work the same way as employment multipliers and are used to predict the economy-wide increases in income which result from increases in incomes in any one sector of an economy.

For example, economists estimate that the income multiplier for agricultural production is 1.93. This means that for each $1,000 of income in farm sector income, an additional $930 in income is generated elsewhere in the economy (i.e., $1,000 farm income x 1.90 = $1,930 total income).

[3]Interindustry Models for Rural Development, Oklahoma State University Experiment Station Technical Bulletin T139, 1974.

For income derived from food manufacturing and processing, economists estimate the multiplier to be 4.14[3]. This means that each $1,000 of income in that sector of a food system generates an additional $4,140 of income in the economy as a whole. Figure 3 below shows the impact of the income multiplier in our state food system.

Figure 3

INCOME MULTIPLIERS

Food System Sector	New Income		Multiplier		Add Income	Total New Income
Farm	$1,000	x	1.93	=	$ 930	$1,930
Food Mfg. & Proc.	$1,000	x	4.14	=	$4,140	$5,140
Totals	$2,000				$5,070	$7,070

To demonstrate the relationship between income multipliers and employment multipliers, the Extension Service in Indiana has estimated that each million dollars worth of agricultural production in Indiana generated about 100 new jobs there[4]. If this relationship between income and employment holds true for Kentucky, we can use it to estimate the number of new jobs which would result in Kentucky from increased food production and processing here.

Kentucky farmers received about $1.3 billion dollars in 1980 for their production of the foods shown on the Food Imports Chart. After a mark-up of about 25%, these foods sold at retail for about $1.7 billion. Assuming the same retail mark-up for our imported foods, plus 5% for transportation costs, we can estimate the farm value of our food imports to be about $1.26 billion.

By dividing this $1.26 billion by the Indiana ratio of value of agricultural production to jobs created ($1,000,000 in farm production = 100 new jobs) we can estimate that Kentucky's food imports represent 126,000 jobs!

[4]Agriculture in Indiana's Economy, Purdue University Cooperative Extension Service.

(i.e., $1.26 billion in agricultural production divided by $1,000,000 = 1,260 x 100 jobs = 126,000 jobs).

Though tobacco's role in Kentucky agriculture may affect the degree to which an analogy between Indiana and Kentucky can be drawn, this estimate assumes that the Kentucky food system is basically similar to the Indiana system, and that Kentucky farmers can meet Kentuckian's demands for the foods listed on the Food Imports Chart.

Due to climatic conditions, Kentucky could probably never meet more than one quarter of its demand for fresh vegetables and this limitation might reduce the potential for new jobs by 10%.

SUMMARY

In 1980, 63% of the food which Kentuckians ate was grown in another state and imported to Kentucky.

For these imported foods, Kentuckians spent $1.8 billion in 1980, or almost $1,700 per household. Food imports to Kentucky amounted to about $17 million for each farm in our state in 1980.

Kentucky farmers could produce most of the foods we import by putting their land resources to better use. By doing so, they could double their annual incomes.

Greater food production in Kentucky could reduce retail food prices for Kentuckians by up to $90,000,000, create as many as 110,000 new jobs in our state, and generate up to $740,000,000 in new income.

These potential long-term benefits which our state might enjoy as a result of reduced food imports are significant. Our ability to reap these benefits depends to a large extent upon our agricultural resources which include land, labor, and capital.

The following section examines how these resources are used in Kentucky and how their utilization has been affected by trends within our nation's food system.

FOOD PRODUCTION IN KENTUCKY

Land is the primary component in our food system.

Out of a total land area of 26 million acres, Kentucky has about 5.4 million acres which are capable of producing crops. As shown in Figure 4 below, these croplands constitute roughly 21% of the total land area of our state.

Figure 1

MAJOR LAND USES

	Acres	%
Forestland	10,648,000	41.2
Pastureland	5,735,000	22.1
Cropland	5,428,000	21.0
Urban Land	2,338,784	9.0
Federal-owned	1,095,000	4.2
Water Areas	608,016	2.5
Total	25,852,800	100.0

Source: Kentucky Soil and Water Conservation Program; Kentucky Soil and Water Conservation Commission, January 1982, Frankfort, Kentucky.

The distribution of and extent of cropland (prime farmlands) within the five physiographic regions of Kentucky are shown in Figures 2 and 3. The distribution and extent of pastureland in these areas, which is used chiefly for the production of livestock, are also shown.

Figure 2

AGRICULTURE LAND USES BY RESOURCE AREAS

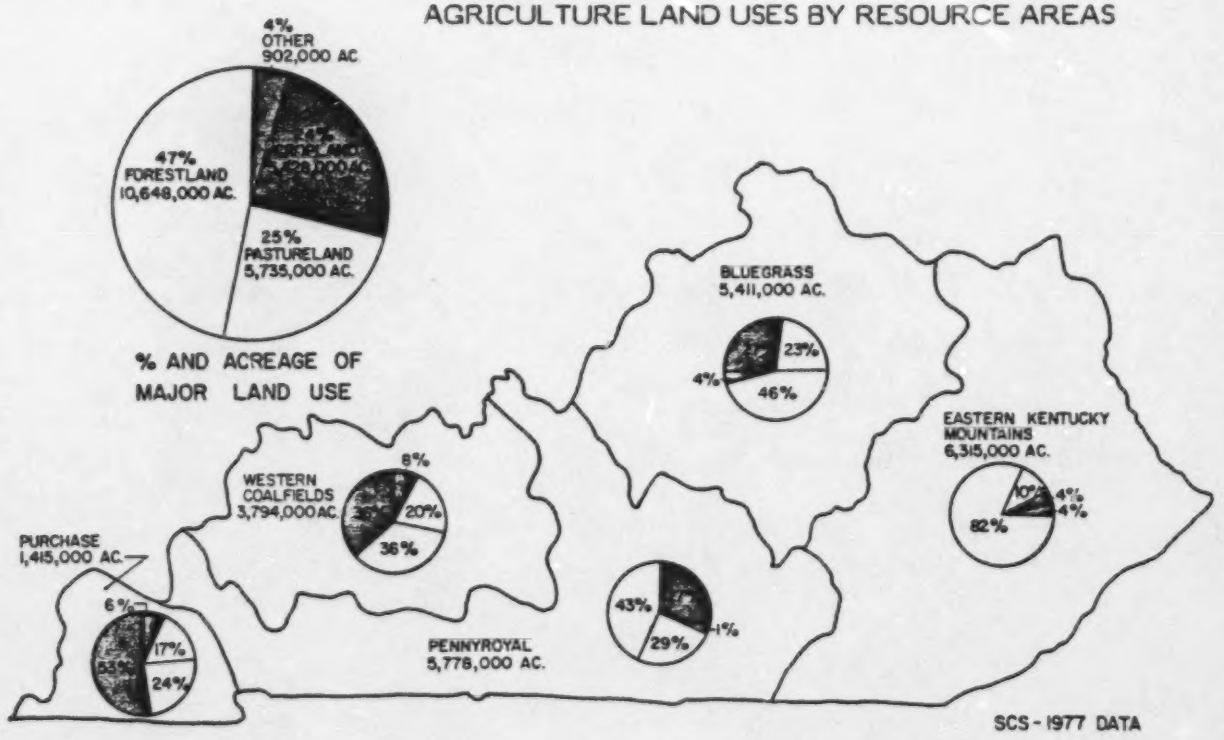
	Acreage*	Non-Federal-Rural Lands**			
Land Resource Areas	**Cropland**	**Pastureland**	**Forest**	**Other**	**Total**
Purchase	746,000	243,000	336,000	90,000	1,415,000
Pennyroyal	1,572,000	1,675,000	2,464,000	67,000	5,778,000
Western Coalfields	1,382,000	753,000	1,380,000	279,000	3,794,000
Bluegrass	1,446,000	2,471,000	1,284,000	208,000	5,411,000
Eastern Ky. Mountains	280,000	593,000	5,184,000	258,000	6,315,000
State Total	5,428,000	5,735,000	10,648,000	902,000	22,713,000

**Base Data from SCS — 1977 National Resources Inventory.*
***Federal and Urban Lands (3,146,000 Acres) are excluded.*

Source: Kentucky Soil and Water Conservation Program

Figure 3

AGRICULTURE LAND USES BY RESOURCE AREAS

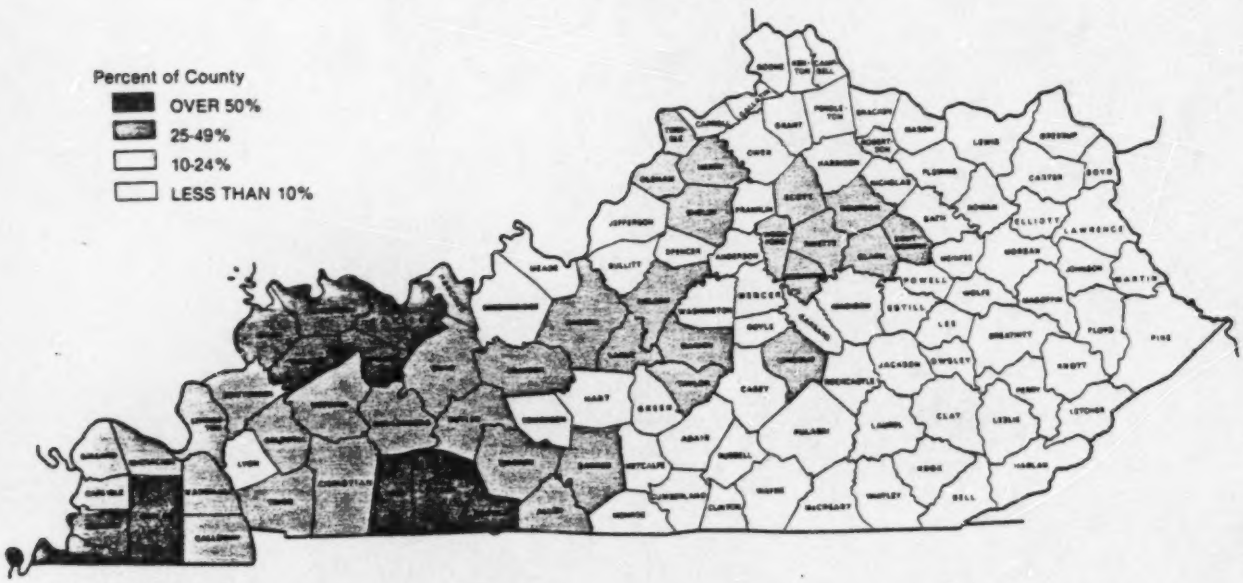


Source: Kentucky Soil and Water Conservation Program

The Prime Farmlands map (Figure 4) shows that most of our state's best farmland is located in the western and central portion of Kentucky. The darkest areas on the map have the greatest percentages of prime farmland.

Figure 4

KENTUCKY PRIME FARMLAND



Source: Kentucky Soil and Water Conservation Program

USE OF CROPLAND IN KENTUCKY

Among all producers in the United States, Kentucky ranks 1st in the production of tobacco and white corn; 4th in non-alfalfa hays; 6th in popcorn; 12th in soybeans; 14th in corn for grain and all other hays; 19th in winter wheat; 20th in sorghum for silage; 21st in barley; 26th in rye; 28th in alfalfa hay; and last in oats.

The land requirements for the "cash grains" (soybeans, corn, popcorn, wheat, barley, rye, and oats) amounted to 3.5 million acres in 1980.

Figure 5

KENTUCKY 1980 CROP SUMMARY - 1979 AND 1980[1]

CROPS	UNIT	Acres Harvested	
		1979	1980
		(1,000 Acres)	
Corn for grain	Bu.	1,300	1,480
Corn for silage	Ton	115	152
White Corn 2-/	Bu.	72	110
Tobacco:			
All	Lbs.	173.7	200.9
Burley	Lbs.	156.0	185.0
Type 22, Fire	Lbs.	5.4	4.3
Type 23, Fire	Lbs.	4.2	3.9
One Sucker	Lbs.	5.5	5.5
Green River	Lbs.	2.6	2.2
Wheat	Bu.	290	350
Oats	Bu.	8	6
Barley	Bu.	25	29
Rye	Bu.	4	3
Soybeans for beans	Bu.	1,660	1,600
Sorghum for grain	Bu.	29	26
Hay:			
All	Ton	1,592	1,560
Alfalfa	Ton	204	200
All Other	Ton	1,390	1,360
Lespedeza Seed 3-/	Lbs.	6.8	1.7
Red Clover Seed 3/	Lbs.	3.2	5.0
Orchardgrass Seed 3/	Lbs.	1.0	1.7
Tall Fescue Seed 3/	Lbs.	17.0	20.0
Popcorn 3/ 4/	Lbs.	10.0	20.0
Bell Peppers 5/ 7/	Cwt.	3.4	2.9
Fruits:			
Apples, Com'l 6/	Lbs.	--	--
Peaches 6/	Lbs.	--	--

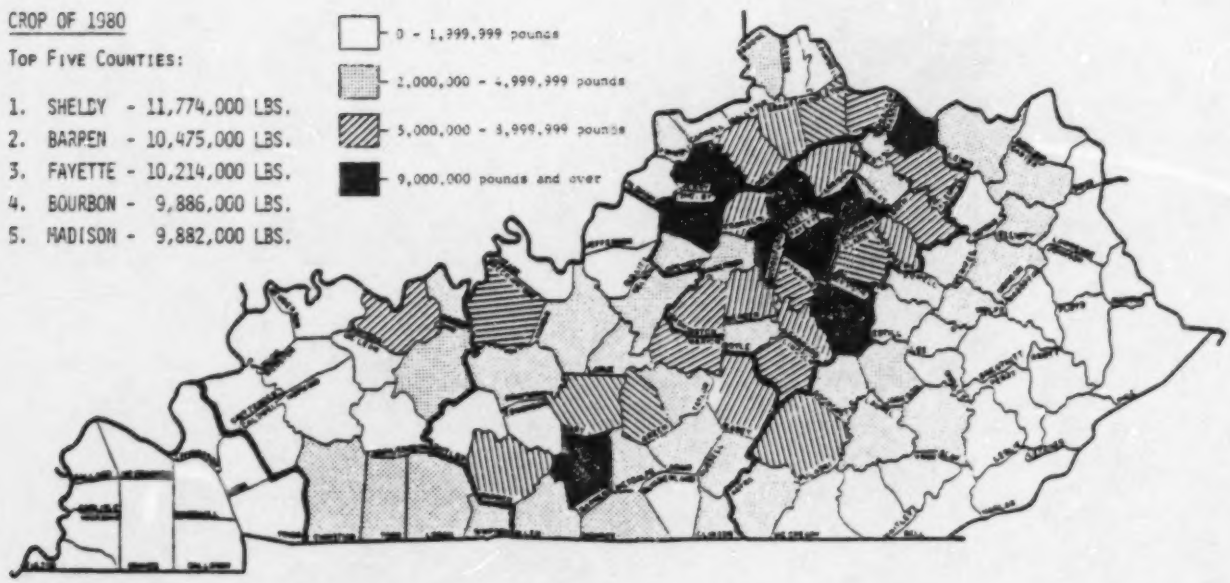
1/Preliminary 1980. 2/Included in Corn for grain. 3/Value per unit is for 100 pounds. 4/Shelled-corn basis. 5/Fresh market and processing. 6/Utilized production. 7/1980 value not reported to avoid disclosing individual operations.

Source: Kentucky Agricultural Statistics, 1980.

As shown in Figure 5, fifty-three percent of Kentucky prime farmland was devoted to the production of corn and soybeans alone. The following maps show that the majority of Kentucky's crop production comes from the western and central portions of the state. Their patterns reflect the distribution of prime farmlands in Kentucky as shown in Figure 5.

Figure 6

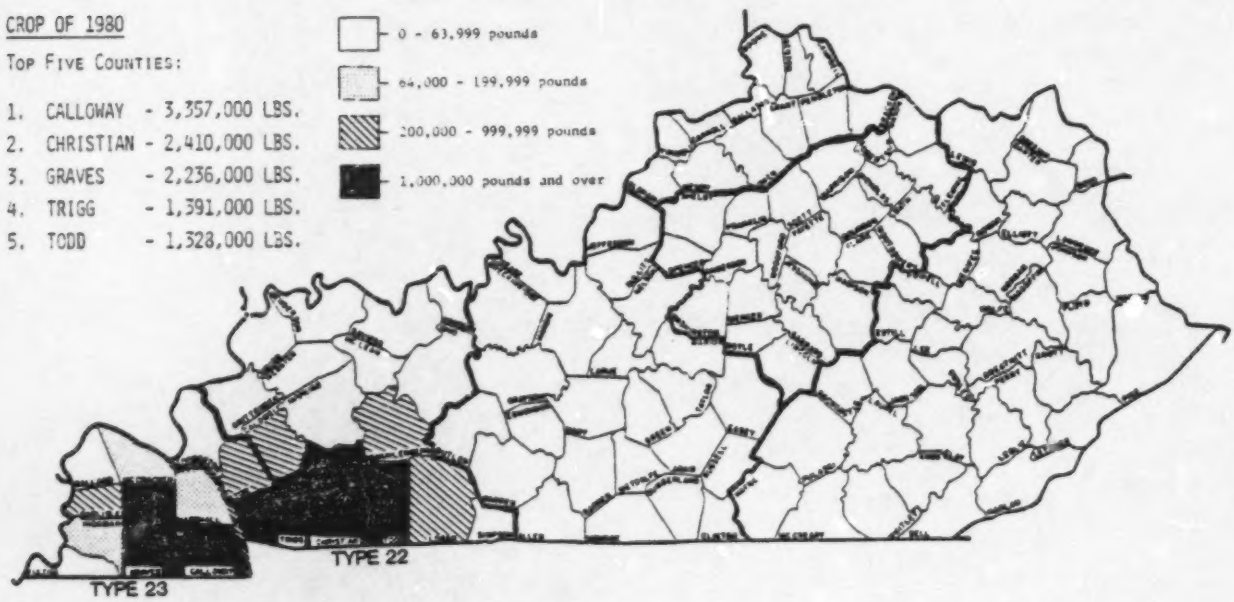
BURLEY TOBACCO PRODUCTION


CROP OF 1980
TOP FIVE COUNTIES:
1. SHELBY - 11,774,000 LBS.
2. BARREN - 10,475,000 LBS.
3. FAYETTE - 10,214,000 LBS.
4. BOURBON - 9,886,000 LBS.
5. MADISON - 9,882,000 LBS.
0 - 1,999,999 pounds
2,000,000 - 4,999,999 pounds
5,000,000 - 8,999,999 pounds
9,000,000 pounds and over

Source: Kentucky Agricultural Statistics, 1980.

Figure 7

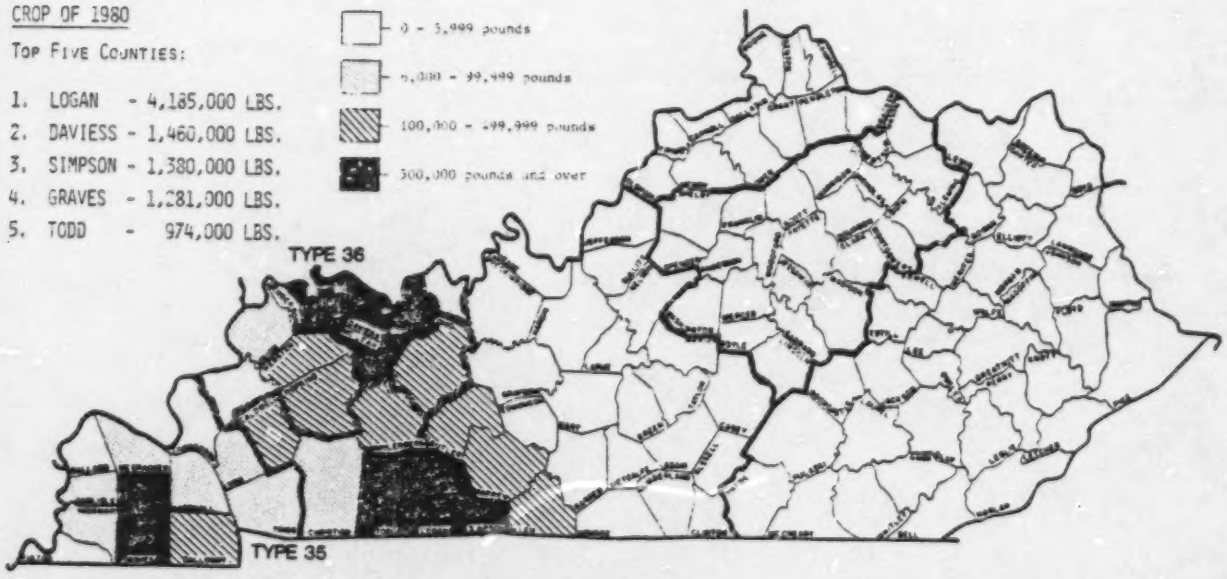
DARK FIRE TOBACCO COUNTY ESTIMATES



Source: Kentucky Agricultural Statistics, 1980.

Figure 8

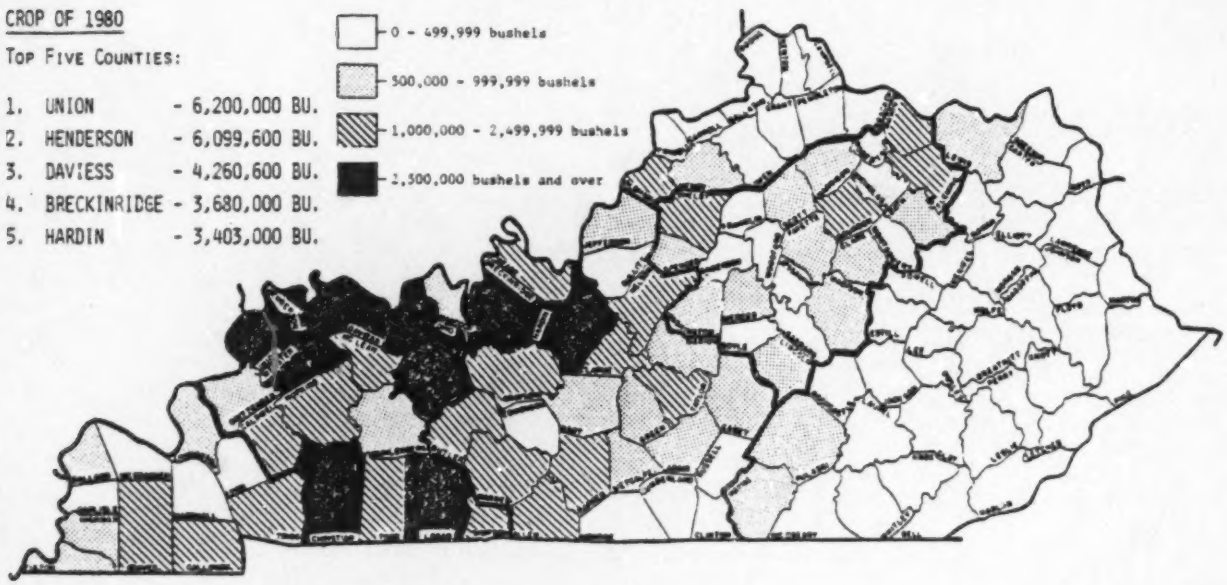
DARK AIR-CURED TOBACCO PRODUCTION



Source: Kentucky Agricultural Statistics, 1980.

Figure 9

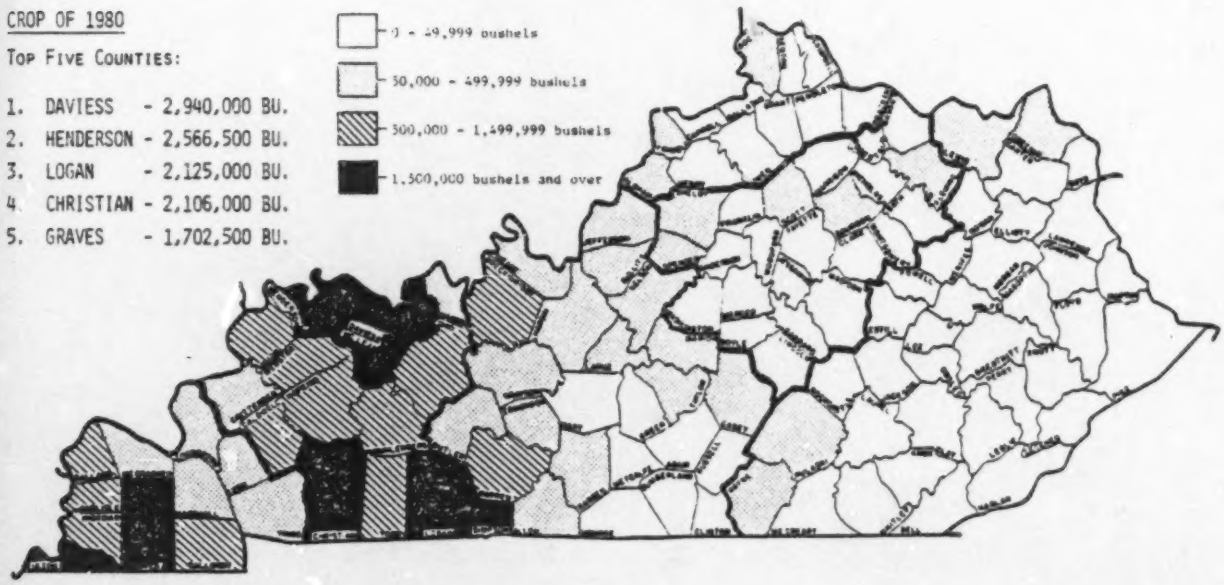
CORN FOR GRAIN PRODUCTION


CROP OF 1980
Top Five Counties:
1. UNION - 6,200,000 BU.
2. HENDERSON - 6,099,600 BU.
3. DAVIESS - 4,260,600 BU.
4. BRECKINRIDGE - 3,680,000 BU.
5. HARDIN - 3,403,000 BU.
0 - 499,999 bushels
500,000 - 999,999 bushels
1,000,000 - 2,499,999 bushels
2,500,000 bushels and over

Source: Kentucky Agricultural Statistics, 1980.

Figure 10

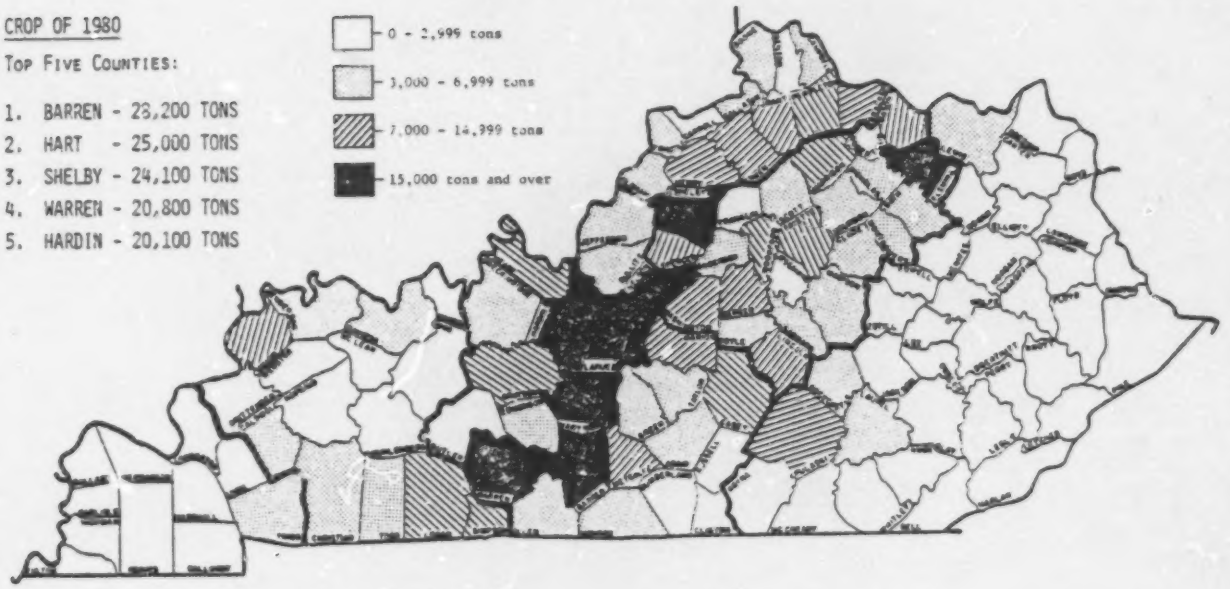
SOYBEAN PRODUCTION


CROP OF 1980
Top Five Counties:
1. DAVIESS - 2,940,000 BU.
2. HENDERSON - 2,566,500 BU.
3. LOGAN - 2,125,000 BU.
4. CHRISTIAN - 2,106,000 BU.
5. GRAVES - 1,702,500 BU.
0 - 49,999 bushels
50,000 - 499,999 bushels
500,000 - 1,499,999 bushels
1,500,000 bushels and over

Source: Kentucky Agricultural Statistics, 1980.

Figure 11

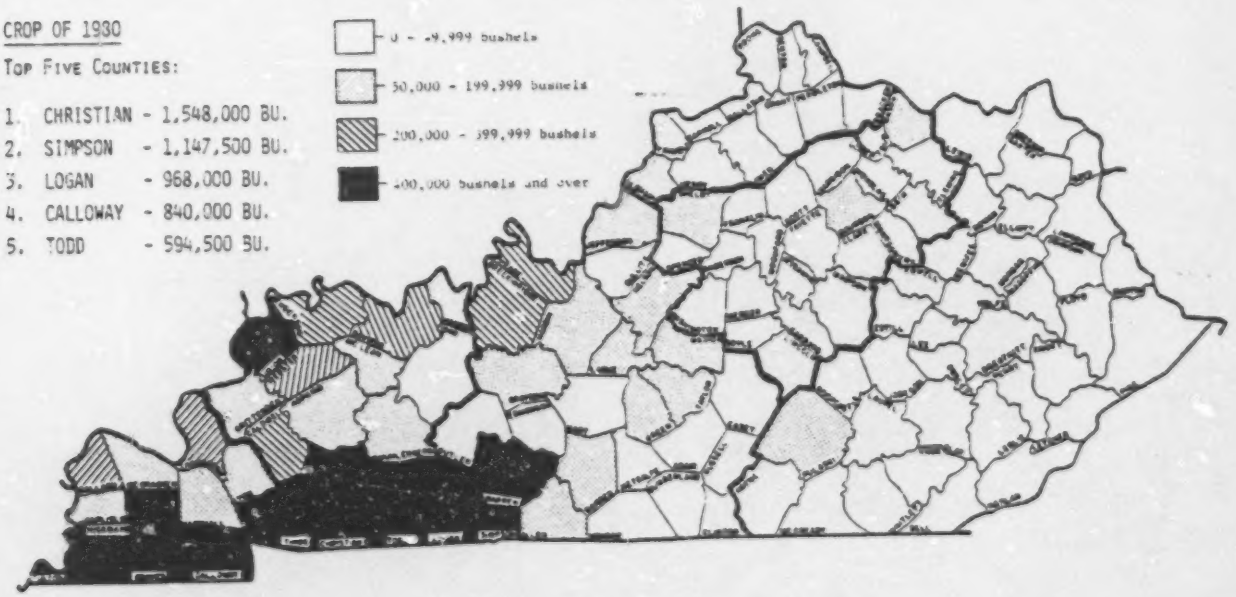
ALFALFA HAY PRODUCTION


CROP OF 1980
Top Five Counties:
1. BARREN - 28,200 TONS
2. HART - 25,000 TONS
3. SHELBY - 24,100 TONS
4. WARREN - 20,800 TONS
5. HARDIN - 20,100 TONS
0 - 2,999 tons
3,000 - 6,999 tons
7,000 - 14,999 tons
15,000 tons and over

Source: Kentucky Agricultural Statistics, 1980.

Figure 12

WINTER WHEAT PRODUCTION

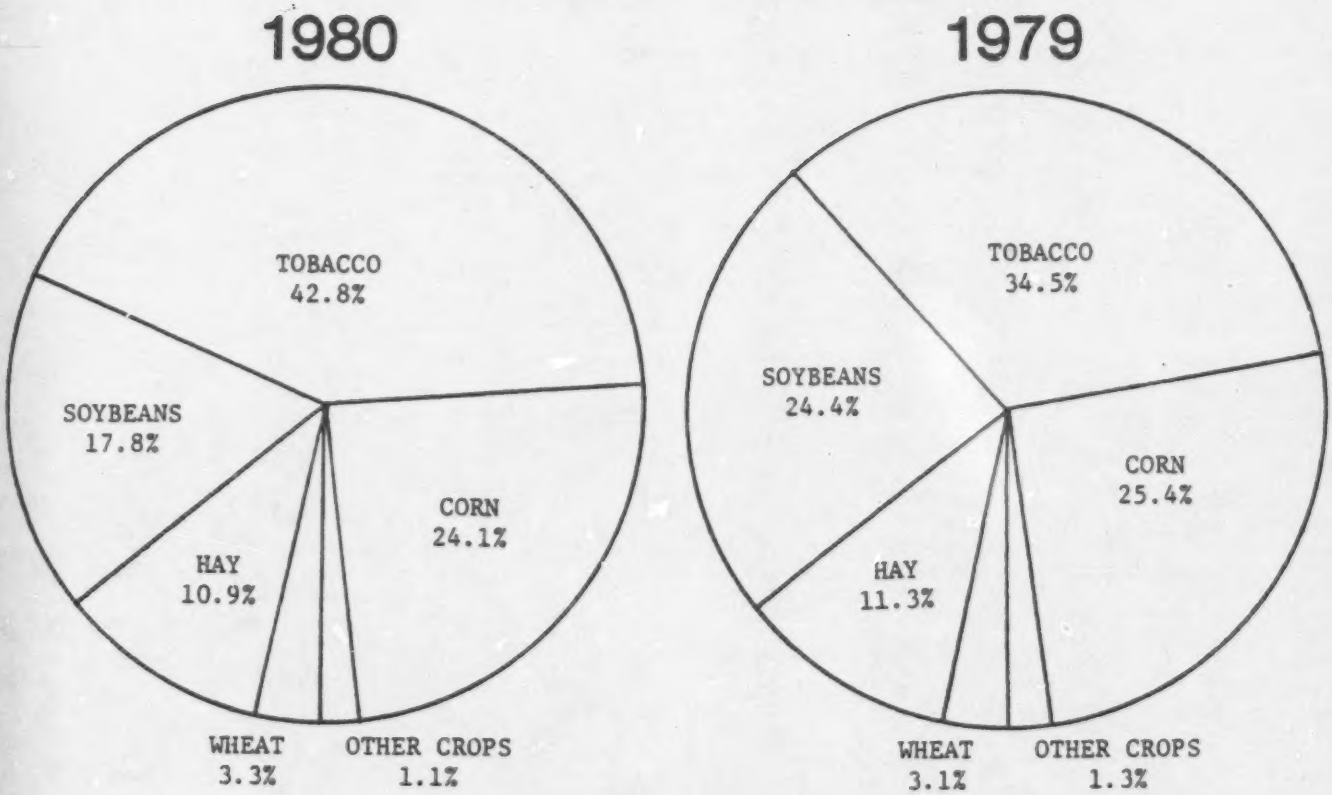

CROP OF 1980
Top Five Counties:
1. CHRISTIAN - 1,548,000 BU.
2. SIMPSON - 1,147,500 BU.
3. LOGAN - 968,000 BU.
4. CALLOWAY - 840,000 BU.
5. TODD - 594,500 BU.
50,000 - 199,999 bushels

Source: Kentucky Agricultural Statistics, 1980.

Kentucky's five major crops (tobacco, corn, soybeans, hay, and wheat) accounted for 99% of the total value of all crops produced in the State in 1980. As shown in Figure 13 below, tobacco continued to be the leading crop in 1980 with 43% of the total crops value, followed by corn (24%), soybeans (18%), hogs (11%), wheat (3%), and other crops (1%).

Figure 13

DISTRIBUTION OF CROP VALUES



Source: Kentucky Agricultural Statistics, 1980.

USE OF PASTURE LAND IN KENTUCKY

As shown in Figure 1, Kentucky has approximately 5.7 million acres of land which, due to soil characteristics and topography, is best suited for use as pasture. These lands are chiefly used for grazing of livestock and are shown on Figure 4 as the lightly shaded area.

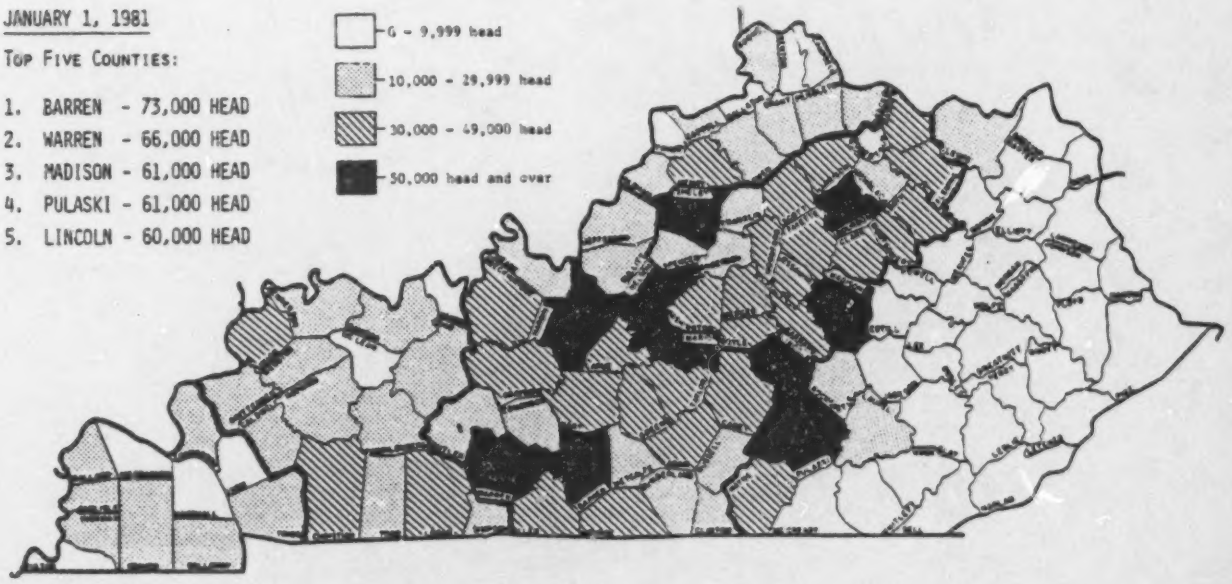
In livestock for slaughter, Kentucky ranks 11th among 43 states for hogs, 19th of 40 for sheep and lambs, 27th of 43 for cattle; 30th of 40 for calves.

In total head of production, Kentucky ranks 11th of 50 for beef and milk cows; 13th of 50 for all hogs; 14th of 50 for all cattle and calves; and 31st of 41 for all sheep and lambs.

Figures 14 through 17 show the areas of the state where livestock production is concentrated.

Figure 14

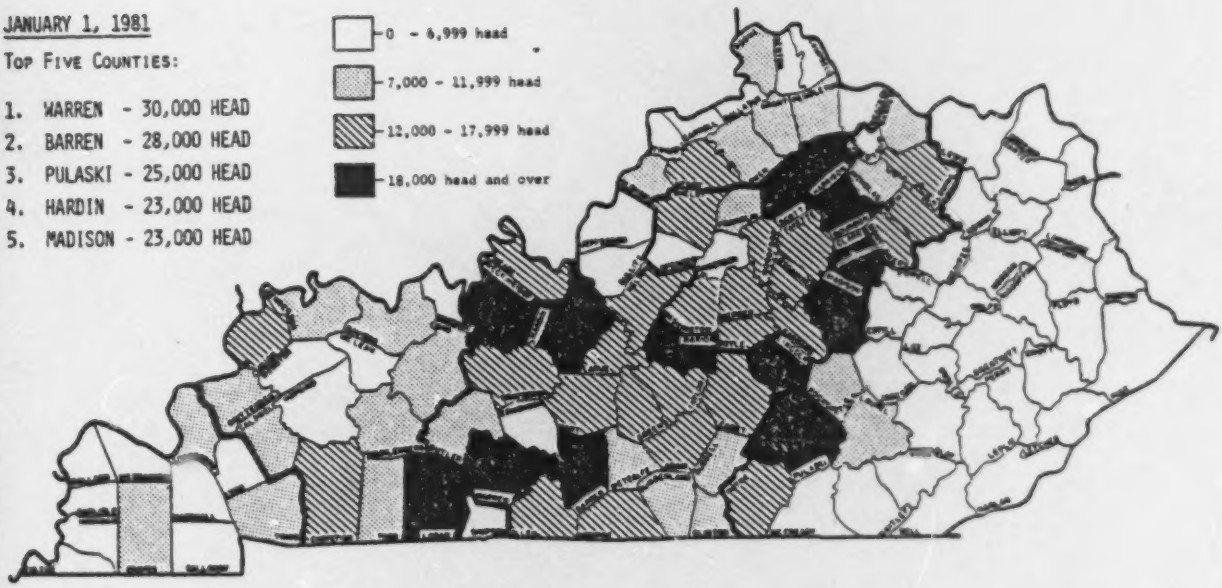
CATTLE AND CALVES


JANUARY 1, 1981
TOP FIVE COUNTIES:
1. BARREN - 73,000 HEAD
2. WARREN - 66,000 HEAD
3. MADISON - 61,000 HEAD
4. PULASKI - 61,000 HEAD
5. LINCOLN - 60,000 HEAD
0 - 9,999 head
10,000 - 29,999 head
30,000 - 49,000 head
50,000 head and over

Source: Kentucky Agricultural Statistics, 1980.

Figure 15

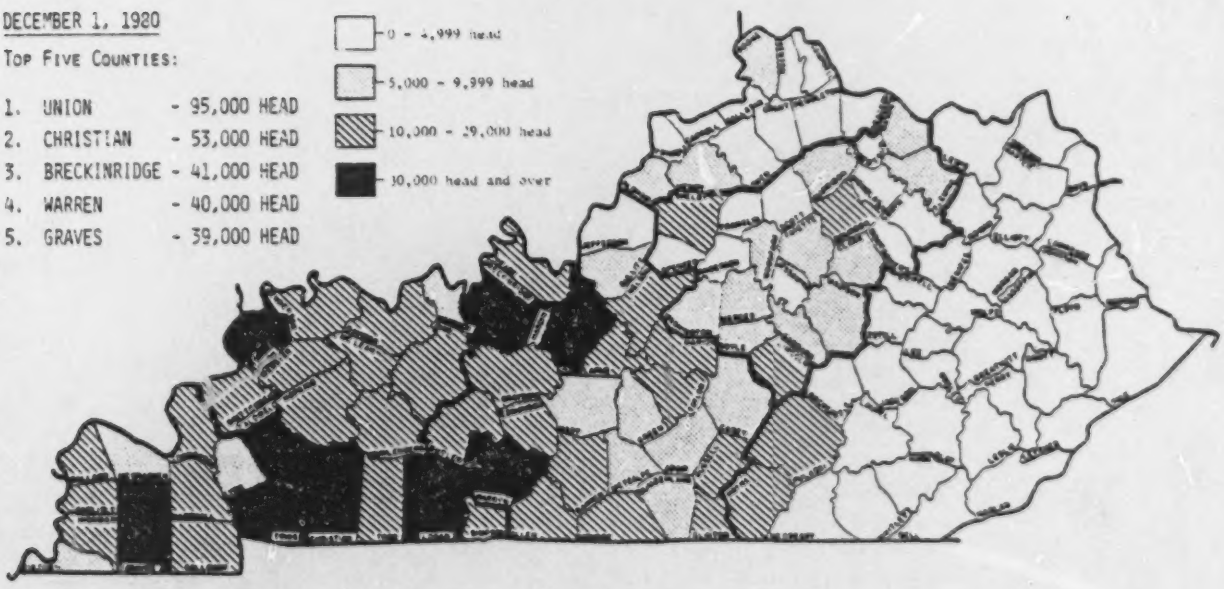
BEEF COWS


JANUARY 1, 1981
Top Five Counties:
1. WARREN - 30,000 HEAD
2. BARREN - 28,000 HEAD
3. PULASKI - 25,000 HEAD
4. HARDIN - 23,000 HEAD
5. MADISON - 23,000 HEAD
0 - 6,999 head
7,000 - 11,999 head
12,000 - 17,999 head
18,000 head and over

Source: Kentucky Agricultural Statistics, 1980.

Figure 16

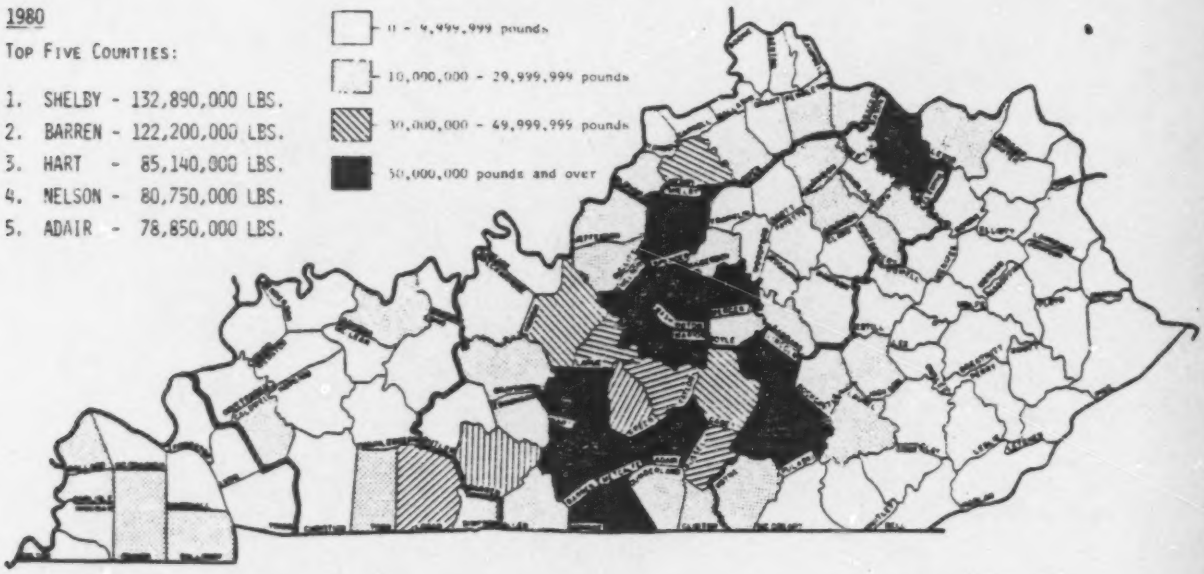
HOGS AND PIGS


DECEMBER 1, 1980
Top Five Counties:
1. UNION - 95,000 HEAD
2. CHRISTIAN - 53,000 HEAD
3. BRECKINRIDGE - 41,000 HEAD
4. WARREN - 40,000 HEAD
5. GRAVES - 39,000 HEAD
0 - 4,999 head
5,000 - 9,999 head
10,000 - 29,000 head
30,000 head and over

Source: Kentucky Agricultural Statistics, 1980.

Figure 17

MILK PRODUCTION



Source: Kentucky Agricultural Statistics, 1980.

TOTAL FARM PRODUCTION

The leading farm products in Kentucky, by their percent of total value of farm production, are shown below.

Figure 18

LEADING FARM PRODUCTS IN KENTUCKY

	% of Total Production
Tobacco	23.6
Cattle/calves	18.0
Corn	14.3
Soybeans	10.5
Dairy	7.8
Hogs	6.5
Wheat	2.0
Poultry/eggs	1.0
Fruits (non-citrus)	0.2
Vegetables	0.1
	insignificant
	84.0

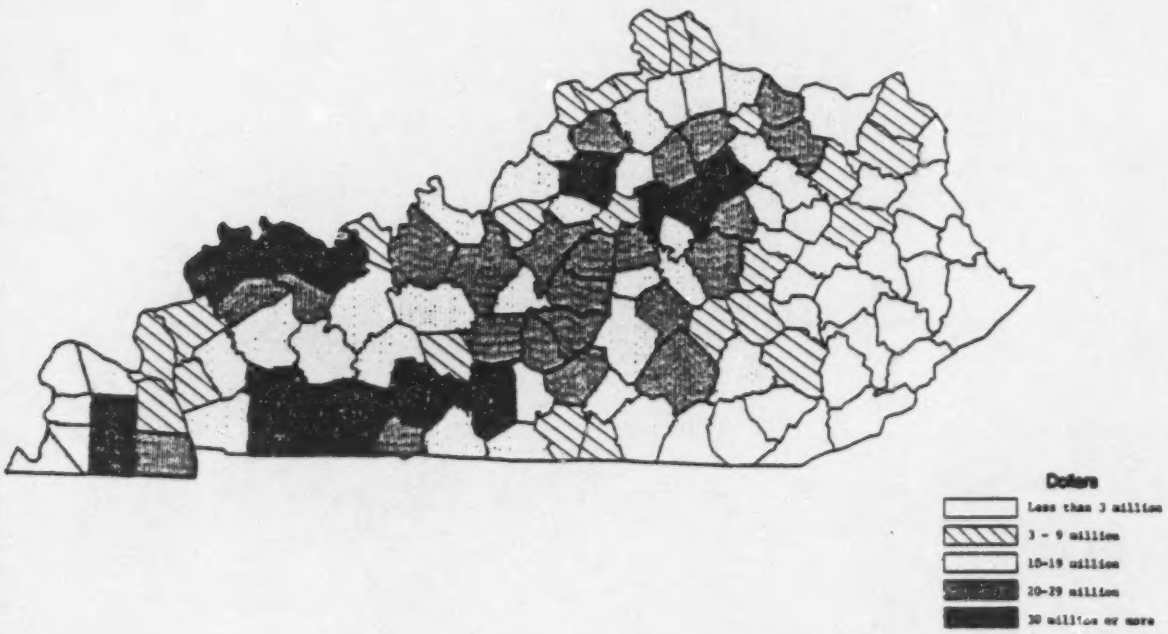
Source: Determinants of Regional Food Security

Figure 19 shows the total value of all agricultural products sold from each Kentucky county in 1980. The darkest counties had the greatest total farm income from crops and livestock production in Kentucky in 1978.

Statewide, crops accounted for approximately 50%, and livestock about 35%, of the total value of all agricultural production in 1980.

Figure 19

VALUE OF AGRICULTURAL PRODUCTS SOLD BY COUNTY: 1978.



Source: Census of Agriculture, Kentucky, 1978.

Exports

Figure 20 shows that exports of Kentucky farm products amount to 23% of total production in 1980.

Figure 20

KENTUCKY'S EXPORTS -- SELECTED COMMODITIES

	Kentucky's share of U.S. exports -%-	Exports as a % of Kentucky's Production
All Commodities	1.4	22.6
Feed Grains	1.4	5.7
Wheat & Flour	0.6	1.8
Soybeans & Products	2.0	6.0
Animal Products	1.7	2.0

Source: Determinants of Regional Food Security

With the exception of tobacco, these exports constitute a minor portion of total American production (Figure 21).

Figure 21

KENTUCKY'S SHARE OF U. S. PRODUCTION

	% of U. S. Production
Tobacco	23.4
Cattle/Calves	1.9
Corn	1.8
Soybeans	2.0
Dairy	1.7
Hogs	2.0
Wheat	0.6
Poultry/Eggs	0.3
Fruits (non-citrus)	insignificant
Vegetables	insignificant
Potatoes	insignificant

Source: Determinants of Regional Food Security

On the most superficial level, it might be said that we import 63% of our foods because the best farmland in Kentucky is used for the production of export products such as tobacco, corn, and soybeans.

However, this explanation, suggesting as it does that agriculture in Kentucky is an entity to itself, ignores the significant national changes which

have occurred in agriculture since WW II and the impacts these changes have had upon farming in Kentucky. As technology, population shifts, and changes in public attitudes have caused agriculture in the U. S. to change, so have they caused agriculture in Kentucky to change.

TECHNOLOGY

Advances in technology, including the development of disease resistant seed varieties, pesticides and herbicides, fertilizers, and farm equipment, have enabled the U. S. farmer to produce more food than we eat.

This surplus allows us to put food on our tables more cheaply than in any other nation in the world. This surplus also makes exports of farm products to another country or state crucial to the farmer.

As food surpluses grew and prices fell, farmers specialized their operations to reduce their production costs. Areas of the nation with unique combinations of soil and climate began to nationally market their specialties more cheaply than local producers could. California's predominance in the vegetable market, Wisconsin's in dairy products, and Florida's in citrus fruits, are examples of this trend toward specialization in which transportation and increased energy use are very important.

As farming areas ceased to compete for a special market, the production know-how and the infrastructure for transportation and marketing, storage, and processing for that specialty, disappeared, further reducing the area's ability to compete in the market place.

Specialization, with its requirements for large tracts of land and expensive, single purpose equipment, has turned farming into agri-businesses in which the availability and cost of credit are important factors in farm profit. And farmers, like all other sectors of the U. S. economy, have been hurt by high energy costs, high interest rates, and inflation.

POPULATION SHIFTS

While the trend toward specialization was developing, the Post WW II baby boom began to affect the types and prices of land resources available to the U. S. farmer.

The automobile, another product of technology, made it possible for our growing population to work in the city and live in the suburbs. As the suburbs grew, urban sprawl increased the price of farmland surrounding the cities to reflect the profits which could be made in using farmland for urban uses rather than for farming.

Since urban development is most profitable when it occurs on flat land with deep, well-drained soil, the U. S. has lost a great deal of its prime farmland for urban uses in the last 30 years. Current estimates put the national rate of conversion of farmland to non-agricultural uses at 3 to 5 million acres per year.

This reduced access to prime farmland near our urban centers has contributed to soil erosion because in many areas of the nation the only land which farmers can afford to farm is less well suited for cultivation than prime farmland. Since less than prime farmland is more susceptible to erosion due to its slope and other characteristics, its use for cultivation is a major factor in America's growing soil erosion problem.

The food surplus referred to earlier also contributes to soil erosion. When food prices are low, farmers often increase their production to achieve the income which a higher price would have provided. Because the land is worked harder and more often, its productivity depends greatly upon the soil conservation practices, such as terracing and rotation. These additional operations, which increase production expenses, are sometimes foregone by farmers. This begins a vicious cycle in which farmland is worked harder for an increasingly diminishing return until the land is unprofitable for use.

PUBLIC ATTITUDES

Agriculture's reliance upon technology and transportation, and its difficulty in competing for the sources it needs to produce our food, are reflected in major changes in public attitudes in our modern society.

The increasing competition for food producing land for other uses is due, in part, to our movement from the rural to the urban areas of our nation where employment opportunities were more numerous.

The development of specialization in agriculture parallels the evolution of the assembly line in modern manufacturing in which each worker performs only one of the many tasks required to produce a finished product.

As we became an urban nation, our familial connection with the farm diminished. In our pursuit of a higher standard of living, convenience and leisure have become increasingly important. This is reflected in census figures which show that more Americans now work in restaurants than on farms.

As our disposable incomes have grown, we can afford the price of fresh vegetables or fruits in February. As a result, the supermarket has replaced the farmer as our source of food.

Supermarkets, by themselves, represent a vast system of wholesalers, warehouses, handlers, processors, packagers, transporters, and advertisers, and reflect the growing interconnectedness and complexity of our food system in which the farmer has become only one of the actors.

This relationship between the farmer and the other actors within our nation's food system was documented by the U. S. Department of Agriculture in its 1980 report entitled, "A Time to Choose".

Among its most significant findings, the report estimated that 25% of total U. S. farm production is controlled, or vertically integrated, through either outright ownership or contract. This estimate was based upon the

Department's research which showed that 74% of all the food manufacturing assets in the U. S. are controlled by 50 companies; that only 22% of the farms in the U. S. generated 81% of total farm sales; and that 54% of all the farmland in the U. S. is controlled by 7% of the "farmers".

The report also concluded that the policies of the federal government have contributed to the trend toward concentration in the U. S. food system. In support of this conclusion, the report cited the fact that the largest 10% of U. S. farms received 46% of all the money expended by the federal government through its many farm programs.

These changes in American agriculture have affected farming in Kentucky. Their impacts are most clearly seen in the change in the number of farms, and the distribution of farm incomes, in Kentucky during the last 35 years.

FARMS IN KENTUCKY

In 1980 there were 103,000 farms in Kentucky with sales of $1,000 or more. Figure 22 below shows that this number compares with an estimated 238,000 such farms in 1945. During this 35-year period, the size of the average Kentucky farm increased from 83 acres to over 143 acres in size.

Figure 22

FARMS IN KENTUCKY 1945 - 1980[a]

	1945	1950	1959	1969	1974	1978	1980[1]
Total Farms	238,000	218,000	150,000	125,000	102,000	109,000	103,000
Land in Farms (million acres)	19	19	17	16	14.5	15	14.6
% of Total Land in Farms	77	76	66	63	57	60	5.7
Average Size of Farms (acres)	83	89	113	128	141	137	143

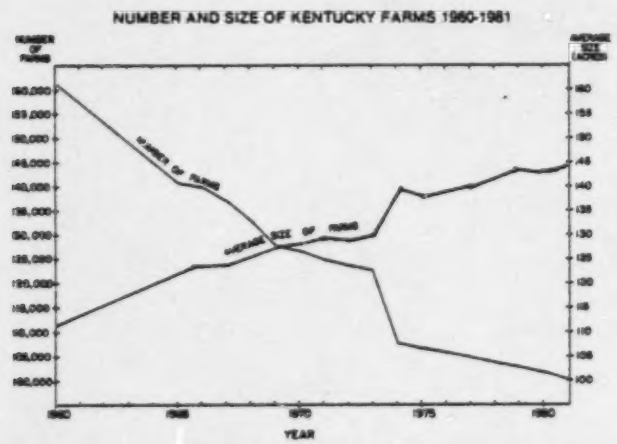
[a]1978 Census of Agriculture

[1]Kentucky Agricultural Statistics, 1980 (preliminary)

Figure 23 below shows the changes in these numbers between 1960 and 1980.

Figure 23

NUMBER AND SIZE OF KENTUCKY FARMS 1960 - 1980



Source: Kentucky Soil and Water Conservation Program

Figures 22 and 23 reflect the national trend toward larger equipment, rising production costs, and reduced availability of farm labor, which have pushed out smaller sized farms, and created fewer farms with larger acreage.

Figure 24 shows the shift in number and size of Kentucky farms between 1969 and 1978 by number of farms by land per farm and the number of farms by economic class. During this period the number of Kentucky farms 1,000 acres or more in size increased by 22% and Kentucky farms with production of $100,000 or more increased by 566%.

Figure 24

BI-MODAL DISTRIBUTION OF FARMS IN KENTUCKY

	1969	1978	Percent change 1978/1969
All Farms	124,990	109,900	-12.07
Average Farm Size	129	137	+6.2
Number by Land-per-Farm			
*1,000 acres or more	740	900	+21.6
*Less than 50 acres	40,700	38,400	-5.7
All others	83,550	70,600	-15.5
Number by Economic Class			
*$100,000 +	390	2,600	+566
*$5,000-$20,000	29,900	40,200	+34.4
*All others	94,700	67,100	-29.1

Source: Determinants of Regional Food Security

SUMMARY

Kentucky has 6 million acres of land which is uniquely suited for the production of food via cultivation. Most of this cropland is located in the western and central portions of our state. Half of this land is used to produce cash grain (corn and soybeans) for export.

Our state has a nearly equal amount of land which is best suited for livestock production, most of which is exported to other states for finishing.

Tobacco, cash grains, and livestock each account for about one-quarter of total farm income in Kentucky. Exports of agricultural products amounted to about 23% of total farm income in 1980.

There were 103,000 farms in Kentucky in 1980 with sales of $1,000 or more. This represents a 57% decline in the number of farms in Kentucky over the post WW II period. While the number of Kentucky farms has been declining, the farms that remain are bigger, now averaging 143 acres. This growth is parallelled by a 566% increase in the number of Kentucky farms which produced $100,000 or more in farm products.

This trend toward fewer and bigger farms in Kentucky reflects the effects of increased reliance upon technology and specialization in agriculture nationally, and the movement of Americans from rural to urban areas and changes in public attitudes.

THE KENTUCKY CORNUCOPIA PROJECT

The objective of the Kentucky Cornucopia Project is to draw attention to our state's dependence upon others to feed ourselves. The Project's chief findings suggest that the economic rewards of reducing food imports to Kentucky would be significant for our state.

Foremost among the Project's findings are:

- Kentucky imported 63% of its food in 1980 and $1.8 billion left our economy to pay for it;
- Food imports to Kentucky in 1980 amounted to $511 per capita or about $17,000,000 per Kentucky farm;
- Transportation costs for our imported foods in 1980 were $90,000,000;
- Kentucky food imports represent 110,000 jobs or over $740,000,000 in employment income;
- Kentucky could produce most of the food imported in 1980.

WHAT WE CAN DO

The quickest way for Kentucky to reduce its dependence upon others for food would be for every Kentucky family to grow its own food. Since it is estimated that 43% of all U. S. households had gardens in 1980, and that each produced an average of 588 pounds of food, this idea does not seem too far-fetched[1].

But, given our demonstrated desire for convenience and leisure, it seems more likely that our farmers will play the key role in reducing our level of food imports. Because of this, it is to them, and to our public officials, that the Cornucopia Project's recommendations are directed.

[1]Gardens for All, National Garden Survey 1980-81, the National Association for Gardening, Burlington, Vermont.

"CAPTURE THE MARKET"

Our food imports represent a market which is currently being met, and enjoyed, by food system actors located in other states. Reductions of our level of food imports implies that those out of state actors would be replaced by actors located in Kentucky.

In simple terms, the "take-over" of our import market by Kentucky requires three things.

First, our farmers must be willing to produce the food which we are currently importing. Second, our farmers must be able to sell their new products to processors, manufacturers, and grocers, so that they are available to us as consumers. Third, consumers must believe that Kentucky grown foods are as good a buy or better than those grown elsewhere and demonstrate their belief by buying them.

In one respect, this equation is much like the chicken- or-the-egg proposition. No one can expect our farmers to invest their land, labor, and capital to produce products which they are not certain they can sell. By the same token, Kentucky consumers cannot buy foods which are not made available to them.

This impasse is due to lack of "middlemen" in our food system. These warehousers, processors, manufacturers, and wholesalers, are vital links in the food system and their relative absence in Kentucky is a major factor in our need to import foods.

To strengthen this weak link in our food system, and to reap the potential rewards of doing so, Kentucky should employ the economic development techniques it has used throughout the last 20 years to attract other industries to our state.

The attraction of food processing and manufacturing businesses to Kentucky would create a market for food products which our farmers are not currently producing. They would also provide wholesale and retail grocers with a convenient supply of locally grown foods which could be sold at lower prices than imported foods.

As part of this program, the Commonwealth could also finance low interest loans to help farmers with the capital expenses they will incur in "retooling" to meet the food market these new middlemen would create.

If restricted to farms located within Kentucky's agricultural districts, this low interest loan program would also provide a significant counter-incentive to the conversion of productive Kentucky farmland to non-agricultural purposes.

In tandem with this program, the government of the state of Kentucky could begin to purchase locally grown foods.

In 1980, the state Parks system purchased over $2.4 million worth of food. Food purchases by other agencies of state government, not including the eight public universities, amounted to more than $2.3 million. Assuming that purchases of food by the universities exceeded the combined total for the Parks and other agencies, state government itself represents a $10 million market for our food producers. Any portion of this amount which local producers were able to capture would generate new jobs and additional income here in Kentucky.

Our state's Colleges of Agriculture also have an important role to play in the reduction of food imports to Kentucky. Though their resources have always been limited, over the years research and extension programs have greatly improved farm productivity and profitability in Kentucky.

These programs will become even more important if, as the federal tobacco program continues to undergo change, Kentucky farmers find it necessary to grow other or additional crops.

As indicated by its 24% share of total farm income in Kentucky, tobacco is our number one cash crop. Any significant change in the tobacco market would have wide ranging economic, and cultural, impacts which extension and research would be called upon to mitigate. Their ability to provide reliable information and technical assistance on the production of new crops could be crucial to the continued existence of the "small farmer" in Kentucky.

Even with a commitment by our farmers, public officials, and institutions to the specific recommendations for action which follow, our dependence upon others will not be reversed overnight.

As a parallel to the saying that "we are what we eat", it can be said that our food system works the way it does because we, as consumers, allow it to. Viewed as a polling booth, the checkout counter tallies our votes for the status quo every time we purchase foods which could have been, but were not, produced in Kentucky.

Ultimately, greater food production by Kentuckians for Kentuckians will come about because we, as consumers, let it be known that this is what we want. Generally, we can do this in three ways.

First, when purchasing food at the supermarket, we can ask our grocer where it came from. If it is not Kentucky grown, we can ask him to stock locally grown foods, or more of them if he is already doing this. Even if he cannot get what we want specifically, he may be able to locate some other Kentucky grown food and, because of our interest, decide to stock it rather than an import. In either event, our inquiries about Kentucky foods will make an impression on him and, if he is interested in his business, he will try to respond to our requests.

Second, we can buy foods at farmers markets and road-side stands operated by farmers. There are over 300 of these direct farmer to consumer outlets across Kentucky. Because they are direct, the foods sold are more nutritious and cheaper than those sold in supermarkets.

An additional benefit of buying foods at farmers markets is the person to person contact it provides. This interaction helps to bridge the gap, now filled by the supermarkets, which separates the food producer from the food consumer. Through these direct meetings, we can let our farmers know that we want them to produce more of the foods we eat and that we will buy them if they will grow them.

Third, we can let our elected and appointed officials know that we want them to initiate policies and programs to increase food production in Kentucky.

Though they may not be able to directly influence food production, their decisions on contracts for food purchases by public agencies, or on the location of highways or other economic development projects in prime farmland areas, or on annexations and subdivision developments, all indirectly affect farming and food production potential in Kentucky.

The recommendations which follow are not all inclusive, but they are specific enough to begin the process of change toward greater food production in Kentucky. The Cornucopia Project welcomes other suggestions.

RECOMMENDATIONS

RECOMMENDATIONS TO CONSUMERS

1. Become more active in your food system. Increase your awareness of what foods are locally produced and which are transported in from other areas of the country. Know the nutritional quality of the food you consume. Share information with friends, neighbors, and supermarket and grocery store personnel.

2. Form a local Cornucopia Project consisting of people who want to work at changing some aspect of their food system. Possible activities include establishing home and community gardens, bartering, cooperative food buying, storing and preserving, setting up food banks, and gleaning from harvested fields.

3. Purchase locally-grown fruits and vegetables in season, taking advantage of their peak nutritional value and decreased cost. You can also process these foods and store them for cold weather months to eliminate higher commercially processed and packages food prices.

4. Support your local farmers by purchasing food directly from growers, thereby increasing their needed financial support while enjoying fresh, nutritious foods at reasonable prices. Start food co-ops and for additional savings, contract with farmers in the region to produce some of your food.

5. Change your eating habits to improve and maintain your health by consuming less fat, salt, sugar, and cholesterol while increasing fiber and vegetable protein intake.

6. Start a home garden to produce more of your own fruits and vegetables. Community gardens provide a greater selection of produce when the harvest is shared with cooperating gardeners. They offer access to land for those (especially urban residents) who might otherwise be unable to garden.

7. Extend your growing season by building solar grown-frames and/or utilizing container gardening.

8. Starting a land trust which could purchase critical agricultural properties as they come on the market, resell them with deed

restrictions to new farm owners, or transfer them to other appropriate trusts or to the city, county, or state at some future time. A land trust is a non-profit corporation which is able to own real property or interest in real property. It is one way to offer permanent protection to selective farming areas within local communities.

RECOMMENDATIONS TO FARMERS

I. Farmland Preservation

1. Take advantage of existing laws. Farmers should become better informed about specific state and local laws which can benefit them. These include: current use value assessment, forming agricultural districts and receiving eligibility for preferential valuation of agricultural land for inheritance taxes.
2. Learn about the diversity of technical assistance and services available to farmers through local conservancies and land trusts, which can show them the best options for the future use of their land, including areas which are not essential to farm production. This kind of planning service would help farmers realize certain economic benefits while still maintaining and preserving their farm operation.
3. Preserve farmland by markedly decreasing soil erosion. Your local soil conservation district will provide you with assistance in developing or updating a soil and water conservation management program, suggesting strategies to build the soil and reduce the need for increasingly costly fertilizer inputs.
4. Reduce soil losses through combinations of structural and management practices, such as conservation tillage, cropland terraces and

diversions, contour farming, the use of crop residues, winter cover crops, and hedges.

5. Take land that is severely eroding out of production.
6. Use marginal lands for grazing livestock instead of crop production.
7. Have soils tested accurately to determine the nutrient value of the soil and its fertilizer needs in order to prevent overuse of costly, energy-intensive fertilizers. Beware of inaccurate soil testing services.

II. Farm Inputs/Resources

1. Diversify production with selected combinations or rotations of crops or an interplay of crops with livestock. This practice would reduce fertilizer and weed control costs while providing the farmer with greater market stability.
2. Diversify production regarding not only types of crops but individual strains of a single crop so as to reduce the risk of farm pests blighting the entire crop.
3. Reduce energy use by investing in more fuel-efficient machinery, looking into solar dryers, letting crops dry naturally whenever possible, adding insulation where feasible, and taking advantage of natural lighting in farm buildings. Investigate possibilities for using alternative energy sources, whether this be the conversion of manure into methane or the use of solar heat for crop drying and other on-farm energy requirements.
4. When dealing with different soil types in large fields, consider reducing field size for maximum ecosystem diversity. This would establish a healthier ecosystem which can vary greatly in one large field.

5. Consider using management practices that will reduce the need for chemical fertilizers, pesticides, and other expensive inputs.

6. Develop on-farm fertilizer sources by growing nitrogen-fixing legumes and green manure crops.

7. Utilize marginal land in combination with more productive soils and proper management to maintain more cattle, thereby increasing beef and organic fertilizer production.

8. Avoid routine spray schedules. Apply pesticies only when needed and target spraying to delay the onset of insect resistance, reduce undesirable residues, do minimal damage to beneficial insects, and decrease costs.

9. Consider alternatives to pesticide use and/or reduction. Thee could be: integrated pest management involving monitoring pest levels for proper timing of applications, no-tillage, crop rotations and interplanting, narrow rows, or broadcast seeding to establish a canopy sooner than with wide row spacing, and biological control of pests to maintain the natural ecosystem.

III. Marketing/Economics

1. Organize marketing co-ops to provide restaurants, schools, and other institutions with locally-grown produce.

2. Work cooperatively with the consumer by selling directly to the public. This will ensure a higher price for the farmer's goods and fresher produce for the consumer at a lower cost.

3. Locate marketing centers strategically for the assembly, grading, packing, and distribution of the output from many small producers thereby providing large buyers with the volumes and specifications they require.

4. Consider small-scale processing on the farm such as processing sausage, cured meats, pickles, preserves, cheeses, etc. Fresh produce can be washed, sorted and packaged for sale to restaurants and markets. Dried beans, nuts, and seeds as well as honey can be sold to food stores and restaurants.

5. Investigate before planting what specific varieties of crops purchasers wish to buy by surveying bulk food purchasers in your area.

6. Sharpen marketing skills by examining price movements to forecast supply and demand. De-emphasize concentration on farm production while allowing time to think, plan, read and analyze the current market so as to obtain a better price for agricultural products.

7. Extend the availability of some produce by staggering planting and harvesting dates between the last frost date of the spring and first frost date of the fall and by selecting varieties with varying periods of maturation.

8. Begin to work towards changing grading and marketing standards that reflect the nutritious quality of the crop rather than its uniformity and appearance.

9. Seek to reduce debt to manageable levels.

10. Encourage local newspapers, if a section is not already provided, to devote columns to farm problems and listing of local/seasonal food availability.

RECOMMENDATIONS TO LOCAL GOVERNMENTS

1. Aid and encourage local food production and distribution by instituting a department to regulate and protect agricultural land use,

encourage urban and rural food production, develop urban markets for local produce, initiate educational programs, and create plans to meet normal and emergency local food needs through local production and storage.

2. Identify the long- and short-term costs to the city before converting any prime farmland to development use.

3. Develop and encourage local food production by:

   a. Establishing city-run gardens in low income areas, and/or providing seeds, tools, and technical assistance on gardening to those receiving food stamps and other kinds of food assistance.

   b. Providing funds to establish gardens and/or greenhouses and subsidizing gardens to schools, prisons, hospitals, and nursing homes.

   c. Establishing community farms on urban fringes to be worked by local farmers or interested city residents.

   d. Promoting contract growing whereby groups of urban families, co-ops, or the city itself arranges to purchase food directly from a local supplier.

   e. Developing loan funds for food self-reliance projects, such as greenhouses, food preservation and storage operations, and small businesses associated with urban agriculture.

   f. Establishing urban agricultural testing programs with the state Cooperative Extension Service to test crop varieties, analyze soil for nutrients and pollutants, test crops for pollutant residues, prepare demonstration sites for various types of urban agriculture and waste recycling, and offer technical assistance on farming as well as design and construction of community greenhouses, cold frames, rooftop gardens, etc.

g. Encouraging local industries which produce low grade waste heat to make use of this energy by producing food in attached greenhouses.

h. Requiring garden areas in new multiple unit housing projects.

i. Making certain that urban street tree programs preserve solar access for food production.

4. Develop and encourage local markets by:

   a. Establishing farmers' markets in the city, particularly in low income neighborhoods, and facilitating authorizations for farmers to accept food stamps at the markets.

   b. Creating mobile farmers' markets and/or fish markets to visit housing projects, neighborhood centers, factories, and universities.

   c. Assisting in the formation of food cooperatives, co-op stores, and preservation/storage centers.

5. Develop and encourage local food processing and storage by sponsoring community food preserving facilities where residents use this service free or at a low cost and/or providing incentives to grocery stores to establish food preserving facilities for their shoppers.

6. Facilitate access to food by implementing a "food hotline" to provide referrals for emergency food, food stamps, and meals for elderly.

7. Create a greater understanding of the importance of agriculture to urban areas through educational programs. Offer seminars in urban agriculture, aquaculture, container and rooftop gardening, food preservation, storage preparation, and nutrition.

8. Establish food banks in your area to store and distribute surplus food.

9. Have county institutions purchase their food supplies from local farmers.

10. Preserve the remaining farmland in the vicinity by creating agricultural open-space preserves to retain prime farmland for agricultural use.

11. Set aside areas for recycling facilities.

12. Investigate land use techniques like clustering, performance controls, and transfer of development rights which would give farmers greater options to develop either on the farm or in other areas within the community or region.

13. Establish an Agricultural Development Council to focus on generating economic solutions to the problems of farmland loss in the counties. These local agricultural development councils would be comprised of people from the entire food system in the county and include farmers, processors, distributors, store managers, and farm service equipment dealers, as well as realtors and bankers. The council could develop local markets for local producers. It could survey local producers to see which ones would grow produce for local consumption and survey local stores, restaurants, and institutions to encourage them to purchase more locally grown foodstuffs. The council could also determine where local food is coming from and could promote more consumption of local foodstuffs.

14. In addition to enforcing the soil erosion and sedimentation control measures, pass local ordinances similar to the one in Sterling,

Wisconsin, which is successfully conserving all agricultural lands over one acre in size with a slope greater than six percent.

15. Undertake joint cooperative agreements, Memorandums of Understanding -- as currently being carried out in Lancaster County, Pennsylvania -- which allow the local conservation district board to review subdivision plans for adequacy of erosion sedimentation control and stormwater management, and give it permission to inspect earthmoving activities to ensure implementation of erosion and sedimentation control practices.

16. Investigate the agricultural Land Evaluation and Site Assessment (LESA) system being developed by the Soil Conservation Service and the U. S. Department of Agriculture. The program will assist planners in identifying farmland that should be protected based on land capability, soil productivity, soil potentials, and important farmland rating.

RECOMMENDATIONS TO THE STATE

1. Promote agricultural production within Kentucky and in nearby states by:

   a. Offering incentives for farmers to diversify production, utilizing technical assistance from extension agents and low-interest state-guaranteed loans to make changes necessary for diversification.

   b. Mandating a study by the Department of Agriculture and University of Kentucky College of Agriculture investigating the potential for producing various crops needed in the state.

c. Establishing demonstration experiments to test crop, animal, and fish varieties suitable to our soil and climate as well as developing low-input sustainable farming techniques.

d. Providing tax incentives for small-scale food producers, such as not taxing the first $10,000 of income from food produced for local consumption.

e. Issuing state tax credits for home and farm production, processing, and storing of food.

f. Encouraging new farmers through loans and incentives to enter into certain types of farming operations, those which would maintain the optimal balance of farm types in the state. (See Research Recommendations #1).

g. Initiating a program like New England's Small Farm Management Assistance Program to provide practical farm management skills to small-scale commercial farmers on a one-to-one basis.

h. Organizing a farmer linkage program whereby experienced farmers bring prospective farmers into their operation easing the transfer of land ownership over time. In this way the new farmer would be more successful in avoiding costly farming mistakes while gaining the tenured operator's knowledge of the farm.

i. Expanding programs such as the Livestock Products Marketing Program to encourage Kentucky farmers to produce these commodities and consumers to purchase them.

2. Preserve remaining farmland in the state by:

   a. Publishing guidelines to help local governments protect agricultural land and enhance farming. These guidelines could include ways to prevent "leapfrog" or random development, which removes from production not only the land that has been developed, but which in the long run isolates adjacent farming areas and inhibits certain farming activities. The state could also delineate ways whereby municipalities could best protect farmland in urban fringe areas, and it could prepare guidelines for different kinds of farmland preservation strategies and techniques including agricultural zoning, transfer of development rights, purchase of development rights, community land trusts, performance zoning. It could prepare procedures which would help local governments assess the different kinds of strategies that would be most appropriate and feasible for them, given the extent of farming in the area, development pressures, commitment of farming community to remain in agriculture, existing and potential land use, economic characteristics, natural features, and attitudes of local residents towards preserving farmland.

   b. Mapping all farmland that the state believes should be protected from development, identifying all Class I and II soils that are crucial to the agricultural capabilities of the state. (The state of California has been engaged in mapping all of its farmland for the last few years in order to identify those areas that are important to the state for agricultural production.)

c. Instituting a farmland capital gains tax in ways which would discourage speculators from investing in farmland, and selling it for development.

d. Creating a committee to inventory and monitor all state-owned farmland and assess its productive capability while working to ensure that this land remains in farming.

e. Consider including a "right of first refusal" amendment to the Kentucky Agricultural Districting Act. The "right of first refusal" or preemption option is currently used in France, where owners of farmland within designated areas must by law notify a state-chartered nonprofit corporation of their intention to sell their land. The corporation has the right to buy the farmland within 30 days.

f. Encouraging municipalities to work together through joint municipal planning by working together to enact and adopt joint municipal comprehensive plans and joint municipal zoning ordinances. This would be one way to achieve agricultural zoning on a more regional basis, which could anticipate many of the current challenges to its constitutionality.

g. Passage of legislation which would record agricultural land transfers on an annual basis.

h. Reducing the capital gains tax for those farmers who sell farmland to young, beginning farmers, especially if farmland is sold at less than full market value.

i. Keeping a yearly record of how effective current farmland preservation legislation has been. Periodic analysis of the

Agricultural Districts Program should be conducted to explain why or why not the legislation is successful and whether or not amendments to the legislation are needed.

3. Stop or decrease the loss of our topsoil by:

   a. Enforcing existing anti-erosion laws by establishing new penalties for erosion damage. This owuld involve prohibiting all agricultural production activities which result in more soil loss per acre per year than the maximum soil regenerative capability in Kentucky.

   b. Linking economic programs, such as loans, crop insurance, disaster relief, and state purchase of farm commodities, to the avoidance of excessive soil erosion.

   c. Instituting and enforcing a "severance tax" on soil losses due to excessive erosion to finance subsidies, to encourage conservation practices, and to pay for downstream dredging of silt, damage to water treatment facilities, and other social costs.

   d. Establishing rewards for soil enrichment, such as tax credits for on-farm soil and water conservation programs, including contour tillage, minimum tillage, and crop rotation. Using public subsidies, such as low-interest loans, preferential farm property tax formulas and valuations, and other tax incentives to encourage cover and permanent cropping, minimum tillage, ridge planting, proper rotation, longer rotations, biological nitrogen fixation, contour plowing, terracing, stripcropping, leaving harvest residues on soil surfaces, reducing soil

compaction and salinity, intercropping, and regional organic waste recycling.

e. Developing incentives for encouraging the use of rental arrangements which include provisions for sharing erosion control and soil enrichment costs with the landowner.

f. Developing public awareness programs to promote understanding of the need to support sound soil conservation practices.

4. Expand local markets by:

a. Establishing more farmers' markets and organizing wholesale farmers' markets to supply retailers, consumer co-ops, and other volume purchasers.

b. Increasing promotional efforts for direct purchase of food from farmers by supermarkets, restaurants, schools, hospitals, and other institutions.

c. Encouraging existing processing plants to purchase locally-grown products.

d. Developing linkages between large-volume food buyers and Kentucky producers.

e. Giving preference to in-state producers in bidding for the sale of foods by permitting state institutions to purchase foodstuffs directly from local farmers and in-state producers at prices at or in excess of the lowest submitted bid according to a percentage to be determined by the state. This is done by the state of Maine.

f. Providing assistance to small growers through a statewide marketing clearinghouse.

g. Assessing the viability of implementing marketing alternatives in Kentucky to determine price and maintain market access for individual farmers through electronic commodity markets, vertical coordination through forward contracting, forward deliverable contract markets, and mandatory public reporting of market information. Other options include exclusive agency bargaining, vertical integration through ownership, joint ventures between agricultural cooperatives and agribusiness-marketing firms, marketing orders, and marketing boards.

h. Establishing regional livestock marketing committees to evaluate alternatives such as regional market centers owned and operated by either a local or a regional cooperative, a regional electronic sales exchange, and contract sales to packers, while providing for more direct movement from producer to slaughterer thereby decreasing costs.

5. Strengthen in-state food-processing capabilities by:

a. Providing incentives for existing food companies to develop more energy-efficient processing and packaging techniques, along with incentives to attract new food processors who wish to reduce transportation costs by locating near a major distribution center.

b. Helping to establish community food processing and storage facilities for the use of families and small commercial food producers. In this way, economies in equipment and energy consumption can be realized.

c. Providing incentives for on-farm processing, cooling, and fresh packing of local food crops.

6. Effect a transition from depletable to renewable energy sources by conducting regional inventories of all renewable energy sources and providing incentives, such as tax credits or low-interest loans for investments made in agricultural energy conservation and on-site development of renewable energy sources, or tax exemptions for income received from the production of renewable energy.

7. Recycle organic wastes to utilize their full potential by:

   a. Preparing a statewide inventory of the types and amounts of organic wastes available now and in the future and assess the ability of these wastes to improve soil fertility and tilth and their potential energy use.

   b. Developing incentives for using local organic wastes for fertilizer and incentives to industry to separate toxic substances from their wastes so that they might be more safely used on cropland.

8. Enact a bill which requires returnable bottles and the recycling of metal cans. This would reduce materials consumption in the food system.

9. Protect the natural environment by enforcing existing environmental protection laws, developing programs for safer handling of toxic pesticides and stronger enforcement of laws against pesticide misuse, and developing stricter standards for pesticide residues in foods. Collect data on pesticide use in Kentucky.

10. Develop long-range food system plans by:

a. Revising and improving the methods by which crops and livestock production data are gathered so that the future direction of the state's agriculture situation is determined based on accurate, reliable information.

b. Creating an overall state food policy which will increase regional self-reliance and economic viability while decreasing the vulnerability of the state's food supply.

c. Planning for an emergency food supply disruption by strengthening our grain storage facilities capacity.

d. Conducting an annual study of the condition of the state food system to find out the amount of food currently being imported and exported, soil erosion losses, amount of land lost to development, and other food system issues while stating what Kentucky can do to increase its self-reliance.

11. Instill a greater understanding of agriculture's role in all Commonwealth citizens by:

a. Increasing awareness of seasonal, locally-grown produce, and its nutritional and economic benefits.

b. Initiating educational programs on farmland preservation, farm energy conservation, reduced pesticide and fertilizer use, recycling of organic wastes, and energy expenditures in different methods of farming and home food production and preparation.

c. Promoting nutrition education campaigns illustrating the relationships between diet and health and the benefits of fresh, locally-grown, and minimally processed foods, as well as bulk purchasing of food.

d. Communicating goals and the condition of our food supply as revealed in the state's annual study.

RECOMMENDATIONS TO THE FOOD INDUSTRY

1. Encourage sustainable farming methods by using the food industry's influence on farm production techniques to decrease the use of dangerous pesticides and increase the use of soil conservation measures. De-emphasize produce appearance while concentrating on freshness and nutritional quality.
2. Minimize energy and material use by using less processing (and/or more efficient methods), simpler packaging, and rail networks more often in transporting commodities.
3. Move toward regionalizing food purchasing, processing, and distribution, thereby decreasing transport costs and strengthening the local economy with increased use of local labor.
4. Promote the consumption of fresh, locally-produced food in season, enhancing consumer nutrition and building a stronger local economy.
5. Provide nutrition education, hints for food preparation, and techniques on preserving fruits and vegetables.
6. Focus on food in a holistic way, recognizing that diet is an essential component of a healthy life and is influential in preventing as well as treating illness.
7. Grocery stores should purchase and label for consumers Kentucky produce. Point-of-purchase literature could be made available to consumers to make them aware of where food originates and the issues involved with this.

RECOMMENDATIONS TO THE AGRICULTURAL RESEARCH COMMUNITY

1. Determine the optimal mix of farm types in Kentucky to obtain sustainable yields of both crops and livestock to meet the state's consumption needs and to provide a sufficient level of exports. Determine the production needed to support processing plants for various commodities. If the commodity is produced in quantities sufficient to make a processing plant economically competitive, this would be an incentive for establishing those businesses in state.
2. Assess relationships between biofuels development (including forest resources) and long-term soil productivity to provide guidelines for future programs.
3. Investigate how to improve the capability of using forage and Kentucky crop wastes.
4. Begin a small-scale-agriculture research program at the University of Kentucky College of Agriculture. This will not only aid small-scale enterprises, but will also help large-scale farms diversify and become less dependent upon a single commodity. Efforts along this line will help meet local food needs and keep Kentucky farmland in production.
    a. There is a need for smaller equipment which would use less energy and decrease the amount of soil compaction and erosion, at a cost that small operators can afford.
    b. Continue and expand research on fruits and vegetables and post-harvest handling methods to benefit small-scale producers.
5. Work to develop plants which resist pests and mature earlier so less drying is required.

6. Investigate Kentucky's soil erosion problems, looking at crop residues, run-off, tillage practices, rotation systems, terraces, equipment use, etc.
7. Investigate perennial agricultural systems (permaculture) appropriate to Kentucky to eliminate annual soil disturbance and decrease energy, fertilizer, pesticide, and herbicide usage.
8. Determine the long-term effects of recommended applications of chemical fertilizers, pesticides, and herbicides on the productivity of selected Kentucky soils.
9. Investigate methods to utilize Kentucky municipal wastes in agriculture.
10. Expand research on biological nitrogen fixation.
11. Develop crop varieties adaptable to low-input farming systems in Kentucky.
12. Explore the potential of small-scale aquaculture in Kentucky to provide high-quality protein using cost-efficient and ecologically sound methods.
13. Set up plots to study the transition phase of switching from conventional to low-input farming systems.
14. Examine methods for producing food in cities, e.g., rooftop food production systems. Seek ways to make urban food distribution and marketing systems more accessible to local and regional food producers.
15. Develop more energy-efficient food processing, storing, and distribution techniques.

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1980 KENTUCKY FOOD IMPORTS[a]

FOOD ITEM	KENTUCKY FOOD PRODUCTION[b] RETAIL WEIGHT 1000 lbs	RETAIL VALUE $1,000	KENTUCKY FOOD CONSUMPTION[c] RETAIL WEIGHT 1,000 lbs	RETAIL VALUE $1,000	%	KENTUCKY IMPORTS[d] RETAIL VALUE $1,000	%	KENTUCKY EXPORTS[e] RETAIL VALUE $1,000	LAND REQUIREMENT[f] FOR KENTUCKY CONSUMPTION ACRES
MEATS									
BEEF	82,384.9	222,439.2	247,117.5	667,217.2	67	444,778.0			849,736.8
VEAL	91.0	245.7	5,492.5	14,828.4	99	14,582.7			
LAMB AND MUTTON	404.0	989.8	4,759.3	11,660.3	92	10,670.5			743.6
PORK	399,028.0	594,331.7	250,046.3	372,368.9			37	221,982.8	402,767.0
POULTRY									
CHICKEN	17,100.0	11,457.0	183,030.0	122,643.5	91	111,186.5			150,258.0
TURKEY	---	---	38,440.5	35,749.6	100	35,749.6			55,358.0
EGGS	69,679.9	33,446.3	126,670.6	60,801.8	45	27,355.5			80,650.0
FISH									
FRESH & FROZEN	65.0	145.6	28,921.9	64,785.0	99	64,639.4			1
CANNED	---	---	17,372.8	39,363.1	100	39,363.1			
DAIRY									
MILK	2,219,000.0	576,940.0	839,708.0	217,024.1			62	359,915.9	135,243.0
CHEESE[g]	59,499.0	132,682.7	80,908.1	180,425.1	27	47,742.4			129,697.0
BUTTER	13,873.0	27,329.8	16,108.4	31,733.5	14	4,403.7			54,483.0
ICE CREAM	44,651.2	41,525.6	63,335.0	58,901.5	30	17,375.9			152,291.0
VEGETABLES, FRESH[h]									
POTATOES	37,500.0	6,900.0	177,480.0	32,656.3	79	25,756.3			7,099.2
LETTUCE	690.0	259.0	89,640.0	33,166.8	99	32,907.8			3,897.3
CABBAGE	6,300.0	1,890.0	30,240.0	9,072.0	79	7,182.0			1,440.0
TOMATOES	8,500.0	5,695.0	41,040.0	27,496.8	79	21,801.8			2,419.1
SWEET CORN	2,400.0	984.0	23,760.0	9,741.6	90	8,757.6			2,970.0
SNAP BEANS	1,000.0	690.0	4,680.0	3,229.2	79	2,539.2			1,170.0
ONIONS	1,500.0	480.3	36,720.0	11,383.2	95	10,902.7			1,184.5
CELERY	---	---	26,280.0	11,300.4	100	11,300.4			525.0
CARROTS	---	---	21,960.0	9,442.8	100	9,442.8			784.2
SWEET POTATOES	2,300.0	575.0	12,240.0	3,060.0	81	2,485.0			1,069.3
CUCUMBERS	11,000.0	5,060.0	16,108.4	7,409.9	32	2,349.9			1,440.0
PEAS	200.0	88.0	158.4	69.7			25	18.3	90.0
MUSHROOMS	---	---	9,771.4	11,627.9	100	11,627.9			---
ASPARAGUS	---	---	1,080.0	1,069.2	100	1,069.2			432.0
BROCCOLI	4,250.0	3,782.5	6,120.0	5,446.8	31	1,664.3			720.0
CAULIFLOWER	---	---	4,759.3	2,522.4	100	2,522.4			468.0
SPINACH	---	---	2,362.7	2,024.5	100	2,024.5			366.1
GARLIC	---	---	2,928.8	2,255.2	100	2,255.2			225.3

Continued on next page

VEGETABLES, FRESH (Continued)

DEHYDRATED ONIONS	---	---	9,772.0	46,414.2	100	46,414.2			59.0
EGGPLANT	1,000.0	490.0	1,803.5	883.7	45	393.7			73.2
DRIED FIELD PEAS	---	---	1,464.5	571.1	100	571.1			---
DRIED BEANS	---	---	23,799.0	15,707.3	100	15,707.3			---
MINOR VEG.	---	---	9,883.0	5,832.1	---	5,832.1			---
RHUBARB	75.0	---	---	---	---	---	---	---	---
PUMPKIN	12,000.0	---	---	---	---	---	---	---	---
OKRA	200.0	---	---	---	---	---	---	---	---
GREENS	---	---	---	---	---	---	---	---	---
TURNIPS	6,000.0	---	---	---	---	---	---	---	---
PEPPERS	2,000.0	---	---	---	---	---	---	---	---
VEGETABLES, PROCESSED									
(C)anned & (F)rozen									
ASPARAGUS									
F	---	---	291.0	750.8	100	750.8			116.4
C	---	---	1,098.0	1,690.9	100	1,690.9			439.2
SNAP BEANS									
F	---	---	3,661.0	3,331.5	100	3,331.5			665.7
C	---	---	22,700.0	7,945.0	100	7,945.0			4,127.2
LIMA BEANS									
F	---	---	1,720.0	1,582.4	100	1,582.4			573.3
C	---	---	1,098.0	713.7	100	713.7			366.0
CARROTS									
F	---	---	3,405.0	1,974.9	100	1,974.9			121.6
C	---	---	1,803.0	721.2	100	721.2			65.3
PEAS									
F	---	---	5,638.0	4,172.1	100	4,172.1			2,013.5
C	---	---	12,082.0	5,195.3	100	5,195.3			431.5
CORN									
F	---	---	7,066.0	5,440.8	100	5,440.8			706.6
C	---	---	21,236.0	8,282.0	100	8,282.0			2,123.6
SPINACH									
F	---	---	2,746.0	1,427.9	100	1,427.9			196.1
C	---	---	1,830.0	951.6	100	951.6			36.3
BROCCOLI (F)	---	---	5,126.0	4,818.4	100	4,818.4			603.0
BRUSSEL SPROUTS (F)	---	---	915.0	823.5	100	823.5			79.5
CAULIFLOWER (F)	---	---	1,684.0	1,599.8	100	1,599.8			168.4
ONIONS (F)	---	---	2,489.0	2,090.7	100	2,090.7			80.2
GREENS (C)	---	---	878.0	544.4	100	544.4			---
PUMPKIN (C)	---	---	1,464.4	483.3	100	483.3			---
BEETS (C)	---	---	4,393.0	1,669.3	100	1,669.3			168.9
PICKLES (C)	---	---	25,263.0	21,726.1	100	21,726.1			2,526.3
WHOLE TOMATOES (C)	---	---	22,334.0	8,710.2	100	8,710.2			1,514.5
TOMATOES-VEG. JUICES	---	---	11,715.2	3,613.1	100	3,613.1			---
SAUERKRAUT	---	---	4,393.0	2,064.7	100	2,064.7			109.8
BELL PEPPERS	22,300.0	16,279.0	12,081.3	8,819.3			46	7,459.7	1,569.0
SWEET POTATOES	---	---	3,661.0	2,818.9	100	2,818.9			318.3
POTATO CHIPS	12,500.0	27,500.0	61,878.0	136,131.6	80	108,631.6			2,475.1

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Cont. on next page

FRUITS									
APPLES	19,100.0	12,224.0	38,576.0	37,488.6	68	25,264.6			419.9
PEACHES	15,500.0	8,525.0	19,769.4	10,873.1	22	2,348.2			248.4
PEARS	---	---	8,786.4	5,008.2	100	5,008.2			126.4
CHERRIES	---	---	2,196.1	2,666.6	100	2,666.6			231.1
STRAWBERRIES	---	---	6,223.7	6,223.7	100	6,223.7			189.2
GRAPES	---	---	13,179.6	13,335.4	100	13,335.4			292.9
MELLONS	3,450.0	276.0	61,870.9	4,949.6	99	4,673.6			511.3
PLUMS/PRUNES	---	---	5,491.5	2,690.8	100	2,690.8			84.2
DRIED FRUIT	---	---	10,764.0	21,528.0	100	21,528.0			---
FROZEN FRUIT	---	---	10,142.0	12,170.4	100	12,170.4			---
FRUIT JUICES	---	---	46,390.0	51,956.7	100	51,956.7			---
CANNED PEACHES	---	---	68,269.0	25,942.2	100	25,942.2			---
FATS AND OILS									
LARD AND TALLOW	---	---	9,132.5	6,406.7	100	6,406.7			---
MARGARINE	---	---	41,003.2	18,861.5	100	18,861.5			---
SHORTENING	---	---	66,996.3	48,907.2	100	48,907.2			---
OILS	---	---	83,961.8	88,999.5	100	88,999.5			---
MISCELLANEOUS									
SUGAR	---	---	501,616.0	200,646.4	100	200,646.4			---
FLOUR	---	---	402,710.0	88,596.2	100	88,596.2			169,919.0
HONEY	1,404.0	1,404.0	4,758.8	4,758.8	71	3,354.8			---
CORN MEAL	---	---	27,457.5	5,766.0	100	5,766.0			8,335.6
TEA[i]	200.0	---	2,928.2	---	---	---	---	---	---
TOTALS		**1,734,855.4**		**3,028,153.9**		**1,882,951.5**		**589,376.7**	**2,243,518.7**

RETAIL VALUE OF KENTUCKY FOOD PRODUCTION $1,734,855.4
RETAIL VALUE OF KENTUCKY FOOD EXPORTS -589,376.7
VALUE OF PRODUCTION REMAINING 1,145,478.7 = **37% OF CONSUMPTION IN THE STATE**

KENTUCKY IMPORTS 63% OF ITS FOOD

[a] As determined by food production, and consumption by weight and retail value; prepared by Michael J. Greene, Kentucky Research and Services, 2005 Newman Road, Lexington, Kentucky 40503. All rights reserved. [b] Per Kentucky Agricultural Statistics, 1980-1981; X retail price/lb. [c] (Ky 1980 population X national average per capita consumption) X (price/lb); price/lb derived from data published by U. S. Bureau of Labor Statistics, Amer. Chamb. of Commerce Researchers Assoc., Ky Farm Bureau Federation, and Pennsylvania Cornucopia Project Report. [d] (Retail weight of Ky production) ÷ (Retail weight of Ky consumption) = % Imports; (Retail value of Ky consumption) - (Retail value of Ky production) = Retail value Ky imports. [e] (Retail value of Ky production) - (Retail value of Ky consumption) = Retail value of Ky exports. [f] (Ky consumption) ÷ (national average yields/acre) = Ky cropland requirements; feed requirements for live stock supplied by UK College of Agriculture faculty/staff. [g] Production figures for cheese, butter, ice cream are for 1978, Ag. Stats, USDA. [h] 1982 data supplied by Dr. Dick Roberts, UK College of Agriculture. [i] Ginseng.

Kentucky Food System Organizations

There are many organizations which directly or indirectly are working toward developing a sustainable food system in Kentucky. The following is a selected list of organizations working with consumers, farmers, and the food industry in Kentucky

Agriculture Colleges and State Universities

* Dr. Robert L. Johnstone, Head
  Agriculture Department
  Berea College
  Berea, KY 40403
  (606) 986-9341 Ext. 525

* Dr. Dwight Barkley, Head
  Agriculture Department
  Eastern Kentucky University
  Richmond, KY 40475
  (606)622-2031

* Mr. Robert Wolf, Acting Head
  Agriculture Department
  Morehead State University
  Morehead, KY 40351
  (606) 783-3305

* Dr. James T. Long, Chairman
  Agriculture Department
  Murray State University
  Murray, KY 42071
  (502)762-3329

* Dr. Charles E. Barnhart, Dean
  College of Agriculture
  University of Kentucky
  Lexington, KY 40564
  (606) 257-4772

* Dr. L. D. Brown, Head
  Agriculture Department
  Western Kentucky University
  Bowling Green, KY 42101
  (502)745-3151

* Members of the Kentucky Agricultural Council

Agricultural Publications, Radio Programs, Press, and Radio Associations

Ag Associates, Inc.
756 S. First Street - Suite 200
Louisville, KY 40202
(502) 584-8060
L. L. Kalvar, Ex. Dir.

DI News
Dairymen, Inc.
10140 Linn Station Road
Louisville, KY 40223
(502) 426-6455
Don Davis, Editor

Farm Bureau News Line Service
Tues, & Thurs. only 8:30 am to
11:00 am EDT (Eastern Time)
1-800-752-6030

Kentucky Agricultural Communicators
120 South Hubbards Lane
Louisville, KY 40207
(502) 897-9481
Mike Feldhaus, Pres.

* Kentucky Agricultural News
Ky. Department of Agriculture
7th Floor, Capital Plaza Tower
Frankfort, KY 40601
(502) 564-3394
Sally Wilson, Editor

Kentucky Farm Bureau Broadcast Service
120 South Hubbards Lane
Louisville, KY 40207
(502) 897-9481
Mike Feldhaus, Dir.

Kentucky Farm Bureau News
120 Hubbards Lane
Louisville, KY 40207
(502) 897-9481
Gary Huddleston, Editor

Kentucky Farmer Magazine
Rt. 9, Box 79 EE
Bowling Green, KY 42101
(502) 781-2249
Wayne Harr, Editor

Kentucky Network
600 Embassy Square
Louisville, KY 40299
Jack Banks, Farm Dir.
Agri-News
(502) 491-2377

Farm Service Radio & TV Network
5801 Maryman Road
Louisville, KY 40258
(502) 937-0125
Jack Crowner, Dir.

Progressive Farmer
Suite 1630, 5050 Poplar
Memphis, TN 38157
(901) 767-2571
Tom Curl, Editor

Rural Kentuckian Magazine
P.O. Box 32170,
4515 Bishop Lane
Louisville, KY 40232
(502) 451-2430
Gary W. Luhr, Editor

Agri-Business & Commercial Associations

Kentucky Farm & Power Equipment
Dealers Association
1210 Commonwealth Building
Louisville, KY 40202
(502) 582-1962

Kentucky Feed & Grain Associations, Inc.
P.O. Box 215
Midway, KY 40347
Phil Weisenberger, Secretary
(606) 254-5282

Kentucky Food Dealers Association
Wallace Gleaves
Goldman Avenue
Louisville, KY 40202

Kentucky Meat Processors Association
Department of Animal Sciences
Agriculture Science Center
University of KY
Lexington, KY 40546
(606) 257-4772

Kentucky Plant Food Association
Millers Lane, Station H
Louisville, KY 40205

Cooperative Associations & State Associations of Farm Agencies

Cumberland Farm Products Cooperative
Box 296
Monticello, KY 42633
(606) 348-8112

* Kentucky Association of Conservation Districts
c/o Division of Conservation
1121 Louisville Road
Pine Hill Plaza
Frankfort, KY 40601
(502) 564-3080

* Kentucky Council of Cooperatives
First Kentucky PCA
P.O. Box 32380
Louisville, KY 40232
(502) 566-7221

Kentucky Farm Bureau Marketing
Association
Bureau Development Corporation
Bureau Federation
120 South Hubbard Lane
Louisville, KY 40207
(502) 897-9481

Kentucky Federation of Federal
Land Bank Association
Attention: C. D. Lucas, Jr.
Federal Bank of Louisville
P.O. Box 32390
Louisville, KY 40232
(502) 587-9621

Louisville Bank for Cooperatives
P.O. Box 32650
Louisville, KY 40232
(502) 58.-9621

Producers Livestock Marketing
Association
1048 East Main Street
Bourbon Stockyards
Louisville, KY 40206
(502) 587-0945

* Southern States Cooperative, Inc.
7110 Grade Lane
P.O. Box 36337
Louisville, KY 40233
(502) 366-0351

Farm and Allied Organizations

Kentucky New Farm Coalition
Jay Nuckols
501 Maple Avenue
Danville, KY 40422
(606) 332-7389

Kentucky Nurserymen's Association
Lee Squires, Exec. Sec. & Treas.
Cave Hill Cemetery
701 Baxter Avenue
Louisville, KY 40204
(502) 451-5630

* Kentucky Retail Federation
Mack J. Morgan, Jr., Pres.
110-A Pocahontas Trail
P.O. Box 237
Georgetown, KY 40324
(502) 863-1628

* Kentucky Development Committee
Dr. Mike Duff, Sec.
203 Agricultural Experiment Station
University of Kentucky
Lexington, KY 40546
(606) 258-4614

Kentucky Rural Health Committee
Don Chasteen, Public Relations
Kentucky Medical Association
3532 Ephraim McDowell Drive
Louisville, KY 40205
(502) 459-9790

Kentucky Society of Farm Managers
& Rural Appraisers
James B. McElroy, Pres.
310 E. Main Street
Morganfield, KY 42437
(502) 389-3440

Kentucky Vegetable Growers
Association
John Strang, Sec.
N-308A Agriculture Science Center-N
University of Kentucky
Lexington, KY 40546

Federal Agencies

Agricultural Marketing Service, USDA
Fruit and Vegetable Division
Jennings Lane
Louisville, KY 40218
(502) 454-3740

Agricultural Stabilization &
Conservation Service, USDA
Lillian A. Hart, State Exec. Dir.
333 Waller Avenue
Lexington, KY 40504
(606) 233-2726

Crop & Livestock Reporting Service
SRS - USDA
David D. Williamson
645 Post Office Building
P.O. Box 1120
Louisville, KY 40201
(502) 582-5293

Farmers Home Administration, USDA
Kendall L. Seaton, State Director
333 Waller Avenue
Lexington, KY 40504
(606) 233-2733

Soil Conservation Service, USDA
Eddie Wood
333 Waller Avenue
Lexington, KY 40504
(606) 233-2749

General Livestock and Poultry Associations

* Kentucky Livestock Improvement Association
Attention: John Johns
810 Agricultural Science, South
University of Kentucky
Lexington, KY 40546
(606) 258-2853

* Kentucky Poultry Improvement Association
Attention: Dr. John Tuttle
604 Agricultural Science, South
University of Kentucky
Lexington, KY 40546-0215
(606) 258-4671

* Kentucky State Beekeepers Asso.
Attention: Bill Eaton
Agriculture Council
36 Fountain Place
Frankfort, KY 40601
(502) 564-6686
(606) 744-1942 (home)

Seed Associations

Kentucky Seed Dealers Association
Jack Austin, Pres.
Austin Seed & Farm Supply
Rt. 4, Box 90
Fulton, KY 42041

Kentucky Seed Improvement Association
P.O. Box 12008
Lexington, KY 40579
(606) 258-2971

State Agencies

* Division of Agricultural Education
Bureau of Vocational Education
Capital Plaza Tower
Frankfort, KY 40601
(502) 564-3775

* Kentucky Department of Agriculture
Capital Plaza Tower, 7th Floor
Frankfort, KY 40601
(502) 564-4696

* Kentucky Department Of Commerce
Capital Plaza Tower
Frankfort, KY 40601
(502) 564-4270

Kentucky Department of Fish & Wildlife Resources
1 Game Farm Road
Frankfort, KY 40601
(502) 564-3400

Kentucky Department of Human Resources
Bureau for Health Services
275 East Main Street
Frankfort, KY 40601
(502) 564-3350

* Kentucky Department of Natural Resources and Environmental Protection
Capital Plaza Tower, 5th Floor
Frankfort, KY 40601
(502) 564-3350

Youth Organizations

Future Farmers of America
Bureau of Vocational Education
Capital Plaza Tower
21st Floor Room 2127
Frankfort, KY 40601
(502) 564-3775

Kentucky 4-H Clubs
University of Kentucky
Rm. 236, Ag Experiment Station
Lexington, KY 40546
(606) 258-5963

Kentucky Future Homemakers of America
Bureau of Vocational Education
Capital Plaza Tower
21st Floor, Room 2129
Frankfort, KY 40601
(502) 564-3472

Kentucky Young Farmers Association
Bureau of Vocational Education
Capital Plaza Tower
21st Floor, Room 2126
Frankfort, KY 40601
(502) 564-3775

Dairy & Food Nutrition Council of the
Southeast, Inc., Mid-South Division
3344 Newburg Road
Louisville, KY 40218

FOOD CO-OPS IN KENTUCKY

December 1981

- Bradfordsville
  c/o Ann Bishop
  Route #1
  Bradfordsville, KY 40009
  502/692-3017

- Bread for Life
  c/o Pam Goodenough
  8 Alumni Manor
  Wilmore, KY 40390

- Breadbasket Buying Club
  c/o Joan Tighe
  523 McCubbin Drive
  Lexington, KY
  606/278-2484

- Buckwheat
  c/o Henrietta Paulson
  2536 Hackworth Street
  Ashland, KY 41101
  (No Phone)

- Buffalo Springs
  P.O. Box 121
  Georgetown, KY 40324

- Campbell County
  c/o Joan Ploeger
  Box 212
  Alexandria, KY 41001

- Capital City
  c/o Eleanor Moseley
  130 Sunset Drive
  Frankfort, KY 40601

- Carlisle (MRÉOC)
  c/o Sue Cope
  Route #3
  Arlington, KY 42021

- Carmen Creek (Henry County)
  c/o Emil R. Bowen
  Box 213
  Campbellsburg, KY 40011

- Carter County
  c/o Cathy Bookser
  303 Horton Street
  Grayson, KY 41143

- Cedar Creek
  c/o Richard Green
  Route #3
  Owenton, KY 40359
  502/484-5548

- Central Park Buying Club
  c/o Sandra Schardein
  Louisville, KY 40201
  502/634-3014

- Concerned Consumers
  8th Central Avenue
  Newport, KY 41072
  606/431-5649

- Country Store
  c/o Margie Obray
  977 Holly Springs
  Lexington, KY

- Crescent Hill
  c/o Patty McGinty
  Crescent Hill United
  Ministries
  330 South Peterson Avenue
  Louisville, KY 40206
  502/893-0346

- Crow's Station
  c/o Chris Barton
  835 Crosshill Road
  Danville, KY 40422
  606/236-1722

- Cumberland Food Co-op, Inc.
  c/o Mary Hoelterhoff
  P.O. Box 337
  Monticello, KY 42633

- Cumberland
  c/o Maureen Smith
  Route #7, Box 183
  Somerset, KY 42501

- East Kentucky
  c/o Alida Herrick
  Route #2, Box 211
  Campton, KY 41301

- Farmer's Co-op Store
  1203 West 9th Street
  Owensboro, KY 42301
  502/683-4535

- Foothills Natural Food Co-op
  c/o Mary Singler
  Route #7
  Richmond, KY 40475
  606/624-0085

- Forkland
  c/o Patricia Williams
  Route #1
  Gravel Switch, KY 40328

- Good Day
  c/o Ilene Rechtenwald
  Box 184
  Dwale, KY 41621
  606/874-9557

- Good Foods Co-op, Inc.
  2350 Woodhill Drive
  Lexington, KY 40507
  606/266-3601

- Good Neighbor
  1942 Payne Street
  Louisville, KY 40206

- Green River
  c/o Anne Hopkins
  Route #6, Box 218
  Campbellsville, KY 42718

- Harlan Buying Club
  Harlan County Community
  Action Agency
  314 South Main Street
  Harlan, KY 40831

- Harlan
  c/o Joan Kaufman
  Route #1
  Baxter, KY 40806
  606/573-7376

- Hart County
  c/o Margo Diamond
  Route #1
  Bonnieville, KY 42713

- Highlands
  Highland Communities
  Ministries, Inc.
  Louisville, KY 40201
  502/451-3659

- Irvine Natural
  137 Broadway
  Irvine, KY 40336
  606/723-2959

- Knott & Perry County
  Legal Service
  c/o Mart Shepherd
  Box 473
  Hindman, KY 41822
  606/785-5749

- Leslie County
  c/o Ray Harmon
  Frontier Nursing Service
  Hyden, KY 41749
  606/672-2901 - Ext. 3142

- Morehead Community
  c/o Natalie Roberts
  310 North Wilson, Apt. #2
  Morehead, KY 40351
  606/784-9403

- Murray Natural
  c/o Vicki Griffin
  Route #3, Box 360
  Murray, KY 42071
  502/759-1159

- New Horizons
  c/o Marilyn Murley
  Route #1
  Raywick, KY 40060
  502/692-2914

- Newport Food Buying Club
  c/o Steve Perry
  P.O. Box 325
  Newport, KY 41072

- Old Louisville
  c/o Gene Reynolds
  Puritan Apartments
  4th Street
  Louisville, KY

- Owensboro Area
  819 Crittenden Street
  Owensboro, KY 42301

- Owensboro Area
  c/o Mary Jane Sanford
  1310 Allen Street
  Owensboro, KY 42301
  502/684-8996

- Peace and Plenty
  c/o Mr. & Mrs. Russ Singer
  Route #2
  Tompkinsville, KY 42167

- ~~Peace and Plenty~~ Beaver Creek
  c/o Lloyd Tewksbury
  Route #1
  Randolph, KY 42129

- Penny Pincher
  c/o Pat Whitchurch
  3908 Hickory Hill Drive
  Somerset, KY 42501

- Perryville Whole
  220 3rd Street
  Perryville, KY 40468

- Real Foods
  c/o Tom & Gail Drillot
  P.O. Box 37
  Arthur, TN 37707

- Roosevelt Food Buying Club
  Roosevelt School
  222 North 17th Street
  Louisville, KY 40201
  502/583-8385

- Springfield
  c/o Bernice Kahn
  128 Domus Court
  Springfield, KY 40069
  606/336-9358

- Three Rivers Vegetable
  c/o Virgil Moore
  Leitchfield, KY 42754

- Vanceburg Health Care Center
  c/o Nelson Allen
  Fairlane Drive
  Vanceburg, KY 41179
  606/796-3046

- Village Co-op Buying Club
  c/o Mrs. Louis Twyman
  2333 Village Drive
  Louisville, KY 40201

- Waddy
  c/o Ken & Linda Pratt
  Route #2
  Waddy, KY 40076

- West Lake Cumberland Odds/Ends
  Box 197
  Columbus, KY 42728

- Whitesburg
  c/o Noel Geneva Jennings
  107 East Main Street
  Whitesburg, KY 41858

- Wholesome Horizons
  c/o Mary Jane Rosenthal
  428 North Hite Avenue
  Louisville, KY 40207

- Woodland Park Area
  c/o Adrienne Grizzell
  149 Woodland Avneue
  Lexington, KY 40502
  606/231-8829